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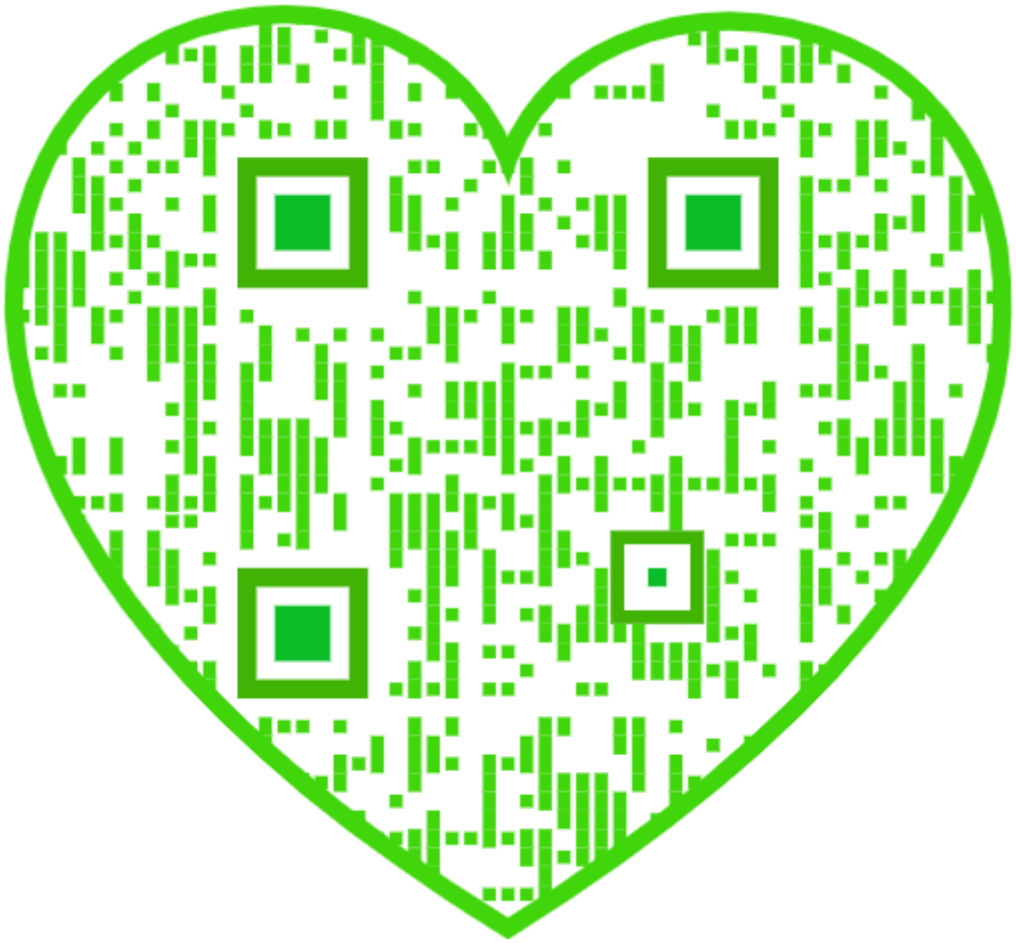

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American school of art and photography

# Library of Amateur Photography

VOLUME III

## General Exterior Photography Composition

PUBLISHED BY
THE CAMERA PUBLISHING COMPANY
FRANK V. CHAMBERS, EDITOR
PHILADELPHIA, PA.
1915

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# INTRODUCTION

In introducing Architectural and Landscape Photography to the reader, we desire to call special attention to one or two points of importance: Foremost, it is wrong to assume, as most people do, that architectural and landscape photographs are easier to make than portraits or figure studies. Perhaps the real cause for this mistaken impression lies in the fact that the average man does not understand nature and, therefore, cannot detect the mistakes in a landscape as readily as he can in a portrait. The reason for this is undoubtedly his lack of knowledge and unfamiliarity with nature and outdoor life. He assumes that certain forms in the picture are meant to represent trees, clouds, mountains and rivers, and accepts them as such without question, since he really knows no better. So, until quite recently, many photographers made landscapes with bald-headed skies—that is, a cloudless sky without atmosphere and without distance, while the place for the sky was represented by white paper in the photograph. Gradually, thanks to the exhibitions and art talks at conventions, the popular taste is now being educated to a truer idea of nature and a finer appreciation of artistic landscape photography.

The instruction in this volume will not only help you to copy nature accurately and make views with absolute fidelity to the original, but also will point the way for you to artistic and pictorial success, for, while a knowledge of nature sufficient to discriminate between what is true and what is untrue enables one to reproduce a landscape scene truthfully, something more is needed to reproduce it in pictorial form. The ideal landscape picture is one that

awakens in us emotions of pleasure and enjoyment. It appeals to us because it is beautiful in itself, apart from any historical or geographical value it may have as a picture. Therefore, to portray beauty, besides being a true and faithful rendering of nature, the picture must also show good selection and proper distribution of light and shade to give it breadth and idealize it.

It is a curious fact that it was not until the seventeenth century that a landscape picture was considered of sufficient importance to make a painting of it. The close of the eighteenth century saw the beginning of modern landscape work, the crowded city, the noise, the bustle and the choking smoke gave man a longing for the fields and the open country. Turner, Corot, Inness, Constable, Millet, all translated this feeling and voiced this aspiration in their wonderful landscape paintings, and now comes the photographer to do the same thing with his camera.

Will he succeed as the painters have done? We wait, we hope. Without aiming avowedly to reduce Landscape Photography to an exact science, the reader will find in the pages of this book some golden rules, whereby pictorial views and good landscapes may be secured with a camera. One can learn much, in this connection, from a study of landscape paintings by the old masters. An examination of these and of other forms of the graphic art, will soon make clear the value of certain laws underlying the principles of selection and arrangement. Add to this good lighting and correct exposure, all of which may be learned from this instruction, and one may hope to express his ideas or impressions of nature rightly in landscape photographs.

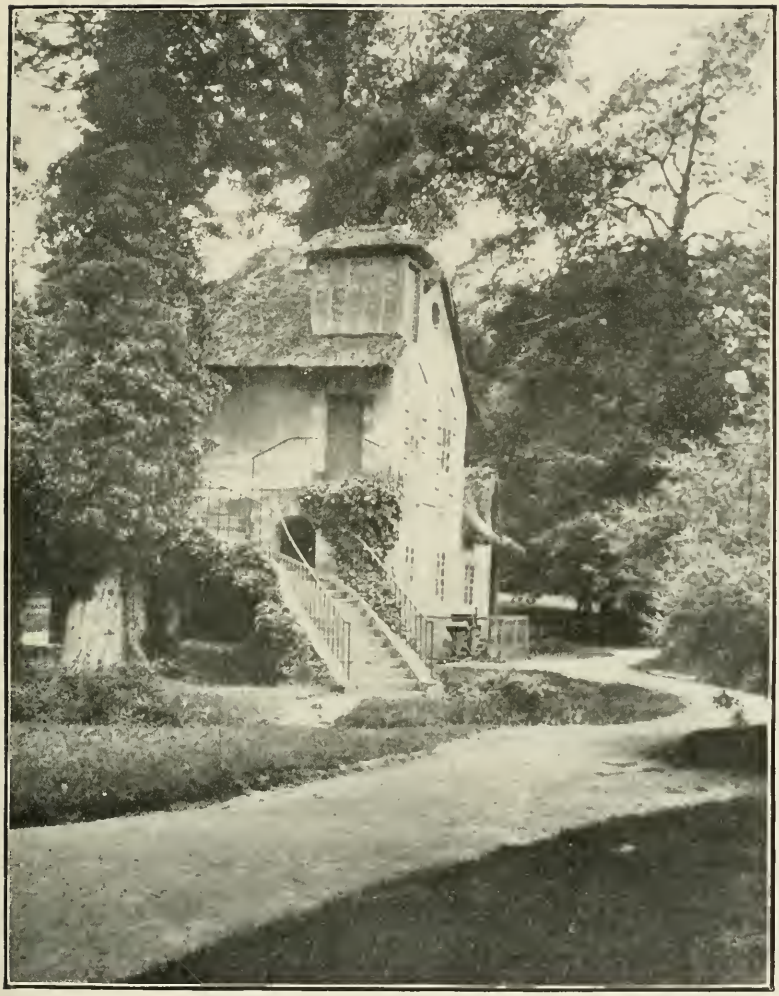
In Architectural Photography, however, the object of the worker is different. Here the photographer aims to secure a print interesting from an architectural, historical, or perhaps archaeological standpoint, his chief object being to obtain a record of facts. He aims, first of all, to secure architectural detail and beauty of line in his photographs. On the other hand, he can improve his picture very much by carefully selecting his view-point and choosing his light-

ing, thereby giving to the picture a certain amount of pictorial quality, without sacrificing the details he wishes to reproduce. He deals with architecture and buildings as with any other subject matter in photography, paying no attention to atmospheric effects, seeking to obtain broad masses of light and shade, and studying especially beauty of line in his picture.

The chief question to settle in making architectural photographs is whether you wish to show every brick and stone in the structure or only to secure an agreeable impression of the building. With this matter settled, it is comparatively easy by a turn of the focusing screw and a large stop to get the chief object of the picture into sharp focus. Then, by changing to the next smaller stop, one can retain the desired degree of sharpness in the building, while the background and accessories are slightly less sharp. Indeed, this is the best principle to follow in all architectural work, making the principal object sharpest and the other objects less sharp, according to their pictorial importance.

The lens is always an important factor in this work. While an ordinary rectilinear working at F-8 can be used, it should be so well corrected for spherical aberration that, if the view is focused at full aperture, stopping down will not be necessary to secure definition. But, on the whole, the modern anastigmat lens has so many advantages it is much to be preferred. These facts, however, are dealt with more at length in the succeeding pages.

Finally, if the photographer begins by acquiring a slight knowledge of architecture, he will then be able to go about his work more intelligently, with less chance of failure. The ordinary apparatus and intelligent enthusiasm are the prime factors for success in making architectural and landscape photographs.



SOUVENIR De PETIT TRIANON

Study No. 1—See Page 307 By Wm. H. Phillips

AN OCTOBER MORNING

Study No. 2—See Page 307 By Sweet Bros.

## CHAPTER I.

## ARCHITECTURAL PHOTOGRAPHY.

### Part I.

### Preliminary Instruction.

1. When the beginner in photography first tries his camera it is usually pointed at some building, generally the family home, for the reason that such an object is erroneously supposed to be the most simple to photograph. Also, because there is ever a demand by the members of the family for a picture of "home." The results of first efforts are eagerly awaited. There are, in consequence, many photographs intended for pictures of "home, sweet home" which are merely caricatures. The base of the house is sometimes wider than the top or is tipping over backwards or sideways, and many times it looks as though a cyclone had twisted the entire building out of shape. In this instruction you are taught how to overcome these difficulties.

2. In the study of Architectural Photography you receive a training on the proper utilization of highlights, shades and shadows, perspective and lines. In the photographing of architecture we really find the foundation of the art. A well executed series of architectural photographs are an interesting and valuable possession and well repay the labor of producing them.

3. An architectural photograph to be of value must be properly executed, and if in photographing buildings they be badly represented their beauty is entirely lost.

4. To the professional workman this branch of photography has proven most fascinating as well as exceedingly profitable. The purpose of this instruction is that you may by careful study, diligent and intelligent practice obtain a

thorough and practical knowledge of the correct photographing of buildings and architecture of every description.

5. **Requirements.**—In an architectural photograph the fundamental requirements are true and perfect perspective. The architect when preparing his designs, keeps the fact in mind that the structure, whether a public building or a dwelling, will be seen from various points and, in order to give it grace, he supplies certain curves and lines, modulating them to that effect. It is, therefore, absolutely necessary for the photographer to interpret these lines in a truthful manner. To do this it is necessary that he must not only study perspective, light, shade and shadow, but most essentially, lines. The location of the horizon, vertical and horizontal lines must also be true. There should be light, shade and shadow, and the proper relation of highlights and shadows is very important.

6. **Outfit.**—While for ordinary architectural pictures the regulation view or hand camera will answer—and there are times when even the pocket film camera will supply the required results—yet for the best results and for difficult work the most modern instruments should be used. It is a fact that a large percentage of architectural pictures are made with the ordinary camera and lens. It is also true that the modern cameras of today are equipped with attachments for the overcoming of many obstacles which could not be conquered with the old style of instruments. While modern cameras are so well equipped, yet few workers realize the value of their improvements; consequently usual results are far from being as satisfactory as they might be. Therefore, with the camera of today one has but to understand the practical advantages of these improvements to produce the best of work.

7. In considering the apparatus necessary for the successful taking of architectural photographs, we will first view the outfit from a professional and then from an amateur standpoint. At one time an architectural photographer's outfit was looked upon as a trifling affair. A view camera of the ordinary type, a rapid rectilinear and a wide

angle lens, were all these outfits consisted of. The portrait photographer considered the taking of buildings, or architectural photography, in general, simply a side issue in his business. As a rule, he did not care to leave his studio and so gave little thought to this most interesting part of the photographic profession. Today, however, the demands on the photographer are entirely different, and both the professional and the amateur have begun to realize that architectural photography requires just as much thought and study as portraiture, as well as the proper kind of outfit.

8. **Cameras.**—The first consideration of the photographer, especially the professional, should be his camera and lens, as in architectural photography it is necessary for the proper photographing of the different kinds of architecture to have different lenses, and sometimes even special cameras.

9. **Professional Cameras.**—The proper camera for a professional should be equipped with square bellows, swing-back, rising and falling front, and rack and pinion movement for focusing. The bellows should be attached to a rigid front frame. This front frame ought to be equipped with two rising and lowering attachments, one for raising or lowering the bellows, the other for regulating the front board to which the lens is attached. The front frame should be high enough to allow the front board to be raised or lowered independently of the bellows, which should remain stationary, except when photographing very high buildings. With a large square bellows, no matter how high the front board is raised, or how short the focal length of the lens may be, there is no danger of the bellows sagging and cutting off any of the rays of light on their way to the plate.

10. **Hand Cameras for Architectural Work.**—Buildings of the ordinary height, such as houses, barns, two or three-story buildings, may be successfully photographed with the ordinary hand or film camera. However, the hand camera equipped with the swing-back attachment, rack and pinion focusing movement, rising and falling front, and reversible ground-glass is very much superior to the stationary or fixed

focus instrument. For all ordinary purposes, one may accomplish with the improved hand camera results almost equal to those obtained with the professional view camera. The only time you will be at a disadvantage is in photographing high buildings located in close quarters. Even then, the use of an extra wide angle lens will easily conquer such an emergency, and if the building is not too high nor too closely confined good results may be obtained. With this outfit any ordinary building can be photographed successfully. But with the fixed focus cameras, such as are generally used by beginners in photography, there is apt to be distortion, unless you work at a sufficient distance from the object to avoid tipping the camera in admitting the entire building into the view. Fixed focused cameras known as snap-shot cameras like all hand instruments must always be held perfectly level for all kinds of work, otherwise there is sure to be distortion. Those having such cameras who meet with failures will readily recognize the cause when they read and understand the advantages of more improved instruments. (See illustrations 14, 15, 17 and 18, showing the use of the swing-back, rising and falling front, division of focus, etc. Pages 55 and 56.)

11. **Swing-Back.**—A swing-back is an attachment at the rear of the camera permitting the ground-glass to remain perpendicular, regardless of angle at which the instrument is tilted.

12. Cameras without swing-backs or swing-beds cannot be used for extremely high buildings for the reason that, in order to obtain rectilinear lines, the ground-glass must be absolutely perpendicular. If the building is very high you cannot photograph all of it and hold the camera level. Should you tip the camera to admit the entire building in the view, the picture would be distorted and the building look as if it were falling over. For such high buildings you will find it necessary to tip the camera and raise the front board, which slides in the groove. It can be raised or lowered to admit the entire building into the view. In order to have the lines perpendicular and an undistorted image of

the building, you will need to make free use of the swing-back. Every time you tip the camera out of level you must use the swing-back to straighten the building on the ground-glass.

13. **Obtaining Perpendicular Lines.**—To help you to determine when you have your lines as true as possible, draw a top and side line, with pencil and straight-edge, ¾ of an inch from the top and side of ground-glass frame, on ground side of the glass. These guides will attract your attention to the lines of your object and enable you to get them perfectly true and perpendicular on the plate.

14. **Double Swing.**—The modern professional view camera is fitted with double swing. The swing will permit of great inclination, being hinged at the bed or pivoted at the center of the back section. The swing-back is absolutely necessary as it not only assists the working of the lens, but permits the photographing of some buildings which would be impossible without the swing-back.

15. **Rack and Pinion for Focusing.**—The rack and pinion movement is an additional improvement to the ordinary camera. With it, focusing is greatly simplified as the cog teeth are very close and fine, thus permitting more accurate focus to be obtained. With the hand camera the rack and pinion is attached to the bed and the racking is to the front. On professional view cameras some manufacturers have it attached to the front, others at the rear. Both methods are good, one having no advantage over the other.

16. **Reversible Back.**—The object of the reversible back is to enable the worker to make either horizontal or vertical views without changing the position of the camera. The back is held in place by means of firm clamps which are easily released when desired. The ground-glass is attached to the frame of the reversible back and for convenience of centering the object on the plate, there should be a vertical and horizontal line drawn through the center of the ground-glass, as we have previously instructed. It is also a good plan to mark the ground-glass for different size plates so that

when plates of a smaller size are used the lines of the view may be easily located on the glass.

17. **Lenses.**—For architectural photography lenses with extreme depth of focus must be used. The ordinary Rapid Rectilinear Lens will, therefore, serve for all ordinary work. There are times when photographing interiors, tall buildings in narrow streets, and working in closely confined places make it necessary for a wide-angle lens to be employed. For these reasons every camera should be equipped with lens of this character that it may be attached instantly when occasion requires.

18. There are also times when objects are to be photographed at long range. For instance, cornices of tall buildings, moving ships at quite a distance from shore, objects on the opposite side of a river; in short, photographing anything at a distance too far away to obtain a satisfactorily large image upon the plate with an ordinary lens. In such cases a Telephoto Lens is of wonderful assistance. The specially constructed Telephoto Lens, which is a very long focus rectilinear instrument, is not in general use by photographers. However, the convertible three-focus lens is very much in use and serves as an excellent all-around instrument. It is used quite generally for ordinary telephoto work. (See Illustration No. 12, Page 51.) Excellent telephoto attachments are now obtainable for $20.00 to $30.00. They make a profitable investment when one has much work of this character.

19. **Convertible Three-Focus Lens.**—With the convertible three-focus lens can be obtained similar results to the Telephoto, as by using the rear combination alone the image is doubled in size. Removing the rear combination entirely and substituting the front produces a still larger image. With even the ordinary rectilinear lens, a larger image can be obtained by removing the rear combination and using the front lens alone.

20. The use of these various combinations is very convenient when it is necessary to photograph at long distances. Often an object photographed with the regular lens will be

quite indistinct, where if the single combination was used it would be much larger and more clearly visible. It must be remembered, however, that by changing the combination of the lenses you also change the working speed. Collectively the lens may be very rapid, yet, when used singly, four times the exposure will be necessary. It is also imperative in using this class of lens to have an extra long bellows, as a short one would not allow for proper focusing. When not using the full length of bellows hook the ring, which is attached to the top of bellows, to the hook over the front board. This will obviate the sagging of the bellows.

21. **Shutters.**—Shutters of the "Bausch & Lomb," or "Wollensak" time and instantaneous registering variety, can be set without opening the shutter, and are most convenient. They are not expensive, nor are they extremely rapid, but as architectural photography does not require extreme rapidity of exposure, they answer all purposes. These shutters are fitted with Iris diaphragms. By means of the Iris diaphragm you can graduate the size of the aperture without interfering with the shutter, a feature which makes this class of shutter most desirable. If a more rapid shutter is desired, the Volute or Sector may be employed. These shutters in the smaller sizes, up to 5x7, are regulated so as to give an exposure from 1-150 to 3 seconds.

22. **Diaphragms or Stops.**—The uses of diaphragms, commonly called stops, in a lens are numerous. By the use of small stops the picture is made sharper, more definition is obtained and the depth of field covered by the lens is increased. In architectural photography it is necessary to use a small stop to meet severe requirements; for instance, photographing a tall building, which necessitates the extreme use of the swing-back. This makes a division of focus between the upper and lower portion of the plate necessary, and in order to produce sharpness throughout the plate a very small stop must be used. While the small stop admits less light upon the sensitized plate, and necessarily prolongs the exposure, it gives greater latitude, greatly reducing the chances of failure. As the architectural photographer sel-

dom finds it necessary to make short exposures the stopping down is not objectionable. By the use of a small stop the contrast in the negative is increased, while the shades and shadows become deeper and sharper. The highlights are thus made stronger. If, on the contrary, a soft negative, free from contrast is desired, this effect can be produced by the use of a large stop.

23. **Tripods.**—We advise the use of a strong, serviceable, wooden tripod, which will support the heaviest camera without danger of vibration. Avoid a tripod of the so-called light weight class. The tripod should be made with telescopic parts. The ends should have sharp points. For these points procure rubber tips for use when photographing on slippery pavements or smooth floors of interiors. They will prevent the tripod from slipping, or the possible marring of highly polished floors. It is also advisable to provide a tripod stay, which prevents the legs from spreading when resting on smooth surfaces.

24. **Composition.**—If the architect has done his work well, with the assistance of the landscape gardener, who lays out the grounds in keeping with the building, the photographer's task will be a pleasant and easy one. It only remains to select a position that will give proper perspective and most artistic effects of light and shade. An architect making a drawing of a building, improves the artistic effects of the work by means of heavy shadows and strong highlights. Without these shadows a building would appear flat. It is possible on paper to give a fine appearance to a building, which, when constructed, may be so poorly located with regard to light and shade as to produce a most disappointing effect. As it is with the architect so it is with the photographer. The photographer must select the time of day to photograph a certain building when the shadows are at the best angles, in order to produce proper drawing. The beauty of the picture depends upon reproducing the angles and trimmings of the building with proper detail. Whenever possible a building should be photographed showing the

Illustration No. 1
See Paragraph No. 30

Illustration No. 2
See Paragraph No. 31

Illustration No. 3
See Paragraph No. 32

Illustration No. 4
See Paragraph No. 33

front and part of one side, thus producing the best perspective.

25. **The Best Time of Day for Making Architectural Views.**—For ordinary architectural work short bellows are preferred. These effects are accomplished by making exposure between the hours of 9 and 11 a. m. or from 1:30 to 4 p. m. In architectural photography you should not photograph a light colored building with the sun directly back of you. To do so would give you a very flat picture, containing all highlights and no shadows. The sunlight should fall a trifle from the side to produce shadows that will accentuate the highlights.

26. To obtain the most artistic effects of the building being photographed, watch the changes of light as the sun rises or sets. This may necessitate a number of visits to the same building. It often pays to spend a part of the day watching the light on a building and viewing it from different points. When the highlights and shadows show a pleasing drawing, make the exposure.

27. Watch the continued changes of longer or shorter shadows on the building, and should it appear to better advantage later on, make another exposure. You will often be surprised at the improvement a longer or shorter shadow will make in the view; so watch your object carefully for best light effects before making the exposure.

28. It is well to remember that a high building can be improved with short shadows, or a low sun; while a low building is improved by long, more perpendicular shadows or a high sun. (See illustrations of architectural views).

29. The crude drawings used in illustrating the uses of the camera are by no means properly proportioned, but will, we hope, serve to show as clearly as possible the advantages and proper manipulation of the different camera attachments, namely: Swing-back, rising and falling front.

30. The half-tone illustrations herein presented serve fully their purpose. The picture of the stone bank building in two views, Nos. 21 and 22, page 72, one taken under a high sun, the other with the sun under a cloud, demonstrate the

advantage of sunlight in architectural work, and in this case, the advantage of a high sun for this class of buildings.

Illustration No. 1. This illustration shows a residence photographed under a strong sunlight at a lower angle, the lights and shadows of which make the trimmings stand out boldly.

31. Illustration No. 2 shows the same building as No. 1, photographed from the same point with the sun under a cloud, but stopped to F. 32, in order to accent the shadows as much as possible. It was fully timed and finally developed with a restraining developer, resulting in a good, strong picture.

32. No. 3 is the same building as Nos. 1 and 2, photographed under a clouded sky. The ordinary large stop was used and the plate developed in the ordinary way, without any restraining, resulting in a very flat print.

33. Illustration No. 4. The architecture in this residence is composed of so many angles that to preserve them they are made to appear best in a subdued light. It will be readily apparent with the sun falling upon the side of the building that more boldness is imparted to the front, thus preserving more clearly the projections and general lines of architecture.

34. Illustration No. 5. This mansion being constructed in one color of grey stone, relieved only by a few stone projections above the first floor and gables, great care was exercised in selecting the best time of day to photograph it. When the sun directly illuminated the front and sides there was nothing to relieve the monotony of color and the building appeared flat. But, as the sun gradually left this portion of the mansion, causing the main body of the house to be thrown into the shadow, the sun's rays fell upon these projections giving strength and boldness to the architecture.

35. Illustration No. 6. Being a very dark building the strong sunlight adds relief to the color monotony.

36. Illustration No. 7. Picture of the same building photographed with the sun obscured by a cloud, resulting in a very flat picture.

Illustration No. 5
See Paragraph No. 34

Illustration No. 6
See Paragraph No. 35

Illustration No. 7
See Paragraph No. 36

Illustration No. 13
See Paragraph No. 49

37. A careful comparison should be made between the frontispiece of this volume and Illustration No. 8. The negative from which the latter print was produced was made three years before the former. The change in the landscape gardening has very materially added to the picturesqueness of the surroundings of this modern colonial residence, and the beautiful cloud effect gives still greater life and naturalness to the whole scene. The exposure of the negative from which the frontispiece was made was excellent. The development was carried to the correct point to bring out the effect of the lighting. The shadows from the trees and under the porch show that the sun was shining brightly and falling at an angle of approximately 45 degrees; which was best suited for this particular subject. The time of day chosen to make the exposure could not have been bettered.

38. Notice carefully that although the side of the house which receives the strongest light is very white, the delicate half-tones have been preserved.

39. In both pictures the point of view is practically the same, the reason for choosing this particular view-point being to have the bay window break the straight perpendicular line of the rear of the house, which would have been formed if a position a little more to the right had been chosen. A position more to the left would have given a straight front view, which, of course, is undesirable.

40. The general lighting effect of the house in Illustration No. 8 is not as good as that of the frontispiece. The sun is much lower, the sky clear, causing a flat effect; while the negative was somewhat over-timed, thus exaggerating the flatness caused by the lighting. The development, however, was carried correctly, even those portions receiving the strongest light having detail in them.

41. Illustration No. 8 is a good technical example of architectural photography. It reproduces that which the architect would desire to show—the trimmings of the house and the general exterior features. The owner of this residence would, no doubt, prefer the print shown in the frontispiece, which is a beautiful piece of architectural photo-

graphy. It not only shows in a general way, the construction of the residence, but also illustrates, in a most truthful manner, the general surroundings and on the whole gives a pleasing, artistic effect.

42. Another striking example of the value of showing more than the actual building itself is shown in Illustration No. 9, where a building of similar type to that shown in the frontispiece is surrounded by shrubbery. The photograph was made from a view-point sufficiently far away to not only show the general surroundings, but also give an angle of view narrow enough to allow the observer to see exactly what the photographer saw. It is always advisable to choose a point of view as far from the residence, or building, as possible, as in so doing the lines of perspective are held more true to nature, and there is less likelihood of destroying the perpendicular lines. In order that the observer's attention may be held on the residence, which is the subject of this picture, the sky has been kept in at a key below medium, except that a slight cloud effect is introduced to relieve the monotony of a perfectly plain sky.

43. An extremely common example of the old New England residence is shown in Illustration No. 10. Not only the house is shown, but also a sufficient amount of lawn and other attractions to offset the plainness of the residence. Notice carefully the manner in which the picture has been balanced. The view-point selected was one which shows practically an equal amount of the front and side of the house. It was necessary to have the camera at this position, as by moving it more to the right the large tree would have cut off part of the house. By moving more to the left, the small building would have detracted from the view of the residence. However, this small building and the fountain have enough weight and attraction to offset the equality of the front and side of the house.

44. Illustration No. 11 shows an average residence with the light falling on it properly, making it stand out boldly, showing the desirable artistic and pleasing points in the architectural construction. The point of view chosen

Illustration No. 8

STUDY No. 3

See Paragraph No. 37

Illustration No. 9

STUDY No. 4

See Paragraph No. 42

is excellent, as it causes the highest point in the picture space to be at one side of the center. This is a feature which must always receive consideration, as it is undesirable, as well as inartistic, to have the highest point directly in the middle of the breadth of the picture space. The exposure and development were both excellent and the retaining of the beautiful cloud effect adds very materially to the beauty of this particular architectural study.

45. Illustration No. 12. Picture of a public building showing by comparison of a portion of the tower, the advantage of using the single combination of the lens. (See Page 51.)

Illustration No. 10

STUDY No. 5

See Paragraph No. 43

Illustration No. 11

STUDY No. 6

See Paragraph No. 44

## CHAPTER II.

# ARCHITECTURAL PHOTOGRAPHY.

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### Part II.

### General Instruction.

46. **Selection of Subject for this Lesson.**—In applying this instruction you should make a photograph of a residence, using your best judgment as to position of camera, time of day to make the view, length of exposure, etc.; basing your judgment entirely on this instruction. While a photograph of a dwelling should suggest the presence of life, it is not intended in this lesson to introduce figures into the view. Carefully remove, if possible, any objectionable feature. There must be harmony and order. The building itself is the principal feature and all accessories, such as hedges, flowers, walks, trees, etc., should be subdued. They are only a part of the general composition, and secondary to the principal, although by their aid they form a harmonious whole.

47. **Proper View-Point.**—The first point to be considered is proper view-point. All buildings in general have more than one elevation appearing on a street and are generally designed with a view of giving more prominence to one of the sides. The photographer must place his camera so as to show this side to the best advantage. It must occupy the larger portion of the picture but not to the detriment of the side showing the lesser part, as distortion would then result and the vanishing line would become too abrupt. Never place your camera directly in front of a building, as

this will give you what is known as a "one point perspective." If all vanishing lines meet at a common point in the center of the view, the horizontal lines will remain level and all effect of perspective is lost. A view taken a trifle to one side will show the true lines of the projections, trimmings of the windows, cornices, etc., and is the best point of attack. Never make a diagonal view which shows equal portions of the front and sides and by which the corners make a dividing line. This gives the building a distorted appearance.

48. **Distance from Camera to the Object.**—Assuming that you have found the proper point of view, we will consider next the required distance from the camera to the object. Usually one can measure the distance very closely with the eye, by placing the camera in a position just far enough from your object to allow the whole building to be seen at one glance. This will come very close to being the right distance.

49. You will find that generally the proper distance from the building would be about two and a half times the height or width of the building, taking the greater dimensions as your guide. If you place your camera too near, you are not only liable to produce too large a picture of the building for the size of the plate, but sharp vanishing lines will occur, which generally cause distortion and destroy the entire character of the building. This is especially noticeable where there is a mansard roof with projecting cornice. By photographing such buildings too closely you lose the value of all the architecture above the cornice, and the details of the roof are also lost. (See Illustration No. 13, Page 40.)

50. This illustration was made with an ordinary hand camera without a swing-back attachment, and you will notice that owing to the camera being placed too near the object, the building is very much distorted and the lines of the roof are much fore-shortened. The beautiful architecture of the roof is entirely lost. This same building viewed from the proper distance would give one an entirely dif-

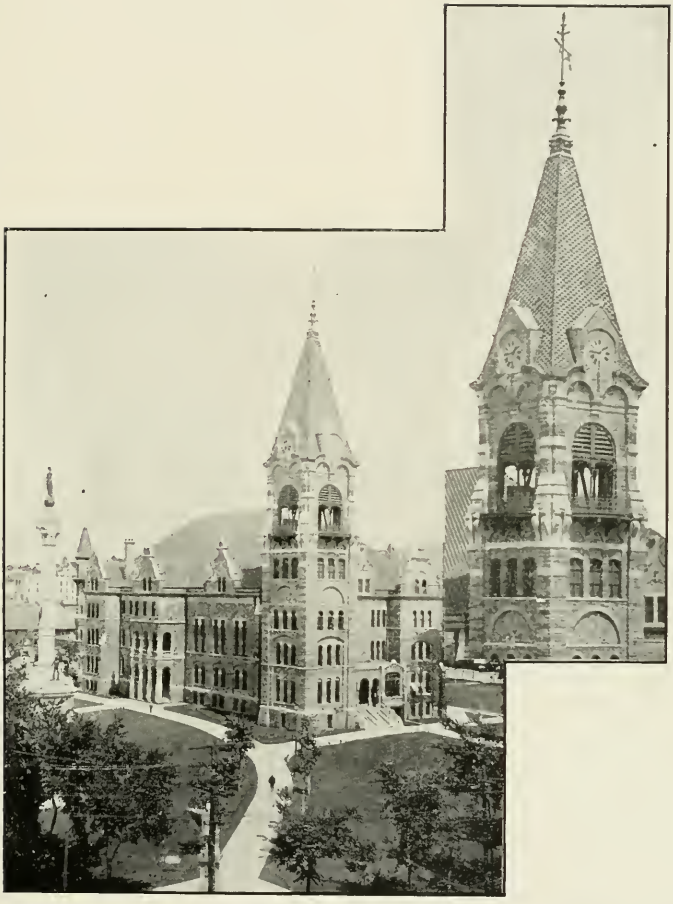
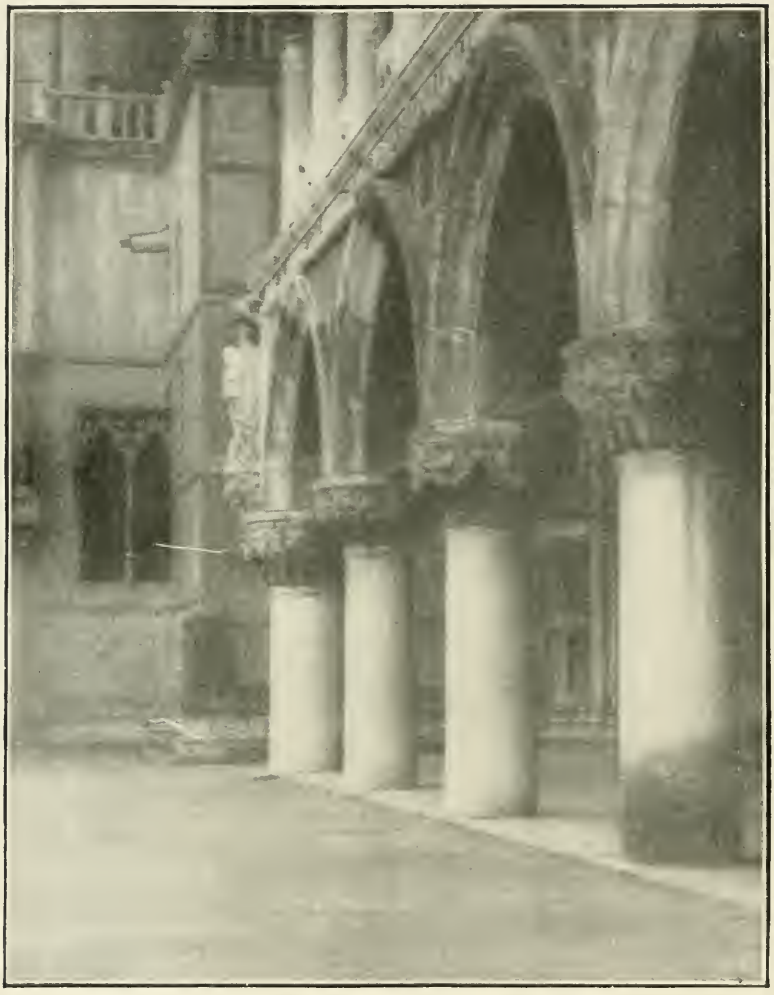


Illustration No. 12
See Paragraph No. 45



A CORNER IN THE PIAZETTI, VENICE

Study No. 7—See Page 307 By Wm. H. Phillips

ferent view, and more clearly reproduce the work of the architect.

51. **Setting up Tripod.**—Assuming that you have selected the proper location from which to make the view, next place your tripod and camera in this position. The tripod should be so placed that one leg is squarely in front of the camera, the others at the sides. In this manner the operator while focusing is in no danger of striking one of the legs, as would be the case if one leg were placed directly back of the camera. In photographing in a narrow street or when making interior pictures, placing the one leg in front of the camera in place of back of it will save at least three feet space, and will enable the operator to not only perform his work much easier but gives him more distance from the object which he is photographing.

52. Many times when one is cramped for room, a foot or two gained in distance makes a marked difference. There are other advantages in placing the odd leg in front of the camera. The leveling of the camera is more easily accomplished, as it can be tilted up, down or sideways by simply moving this center leg in front. In the case of exterior pictures made under a heavy wind, there is less liability of the camera moving, as the operator can stand behind it and break the principal force of the wind.

53. **Focusing.**—By correct focusing is meant the obtaining of good, clear outlines of the image on the ground-glass of any object being photographed. This is obtained by the racking out of the bellows until the image appears entirely sharp on all parts of the ground-glass. This is not always possible, because there are times when views contain objects at different distances from the camera which cannot all be focused with perfect sharpness at once. One object gains in sharpness at the expense of another. This is especially noticeable in architectural photography. The building being of considerable length, the rear end, which is farther away from the camera than the front, will not be in the same line of focus. To obtain a sharp focus on the front

of the building the rear would be out of focus (not as clear and sharp as the front part).

54. In order to obtain a sharp focus of the entire building the difference between the front and rear must be divided. This is what is termed dividing the focus. By racking the bellows forward a trifle the front will lose a little of its sharpness, but the rear will appear much clearer and sharper, and after the lens is diaphragmed down to a small opening the entire image will appear sharp. Care must be exercised that you do not rack the bellows forward too far and throw the front of the building out of focus, for while the stopping down of the lens sharpens the rear, it has only a slight effect on the sharpening of the foreground, or front. It is advisable, therefore, to always note the appearance of the image on the ground-glass after stopping down, and see that the foreground is sufficiently sharp.

55. It is a good practice to adjust the tripod first and see that it is perfectly level, and then attach the camera to it. By being careful that your camera is placed level, it will facilitate the obtaining of rectilinear lines of the building. If the building is a high one the swing-back must be brought into use.

56. **Using the Swing-Back Properly.**—Having attached the camera to a carefully leveled tripod, you will find that the axis of the lens is in the center of the ground-glass, but the top of the building and sky line are cut off. (See Illustration No. 14).

57. By reference to Illustration No. 14, showing the camera placed perfectly level, you will note that line C leading from the base of the building through the lens to the ground-glass, comes within the range of the ground-glass, while line A leading from the top of the building extends beyond the ground-glass, the building being too high to be entirely admitted into the view. The dotted line leading from the edge of the ground-glass to the building indicates the portion of the building projected on the screen.

58. By reference to Illustration No. 15 you will see the effect of tipping the camera upwards in an endeavor to ad-

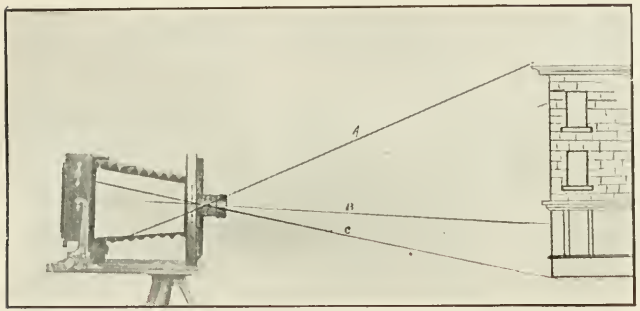



Illustration No. 14—See Paragraph No. 56

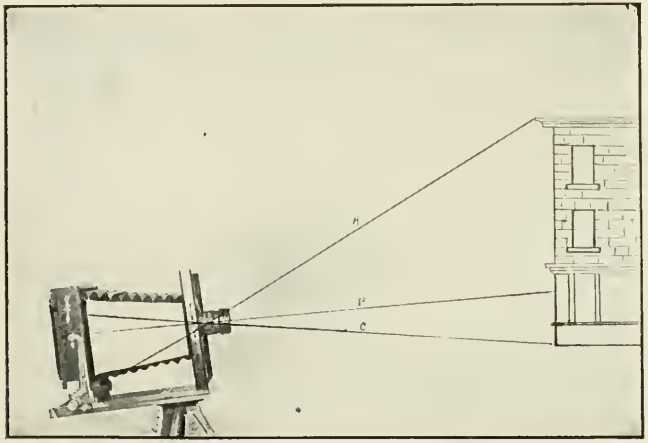



Illustration No. 15—See Paragraph No. 58

Illustration No. 16
See Paragraph No. 59

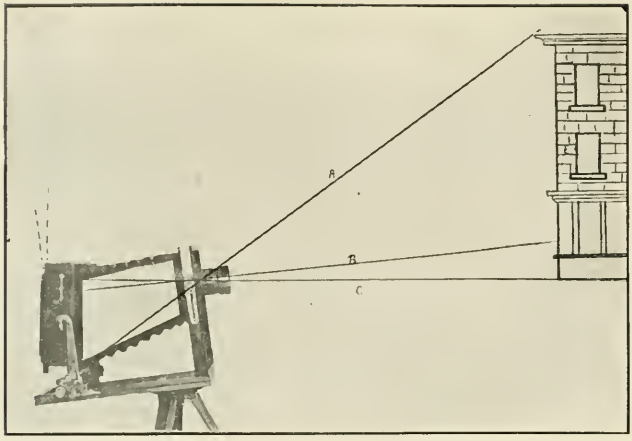



Illustration No. 17—See Paragraphs No. 61-64

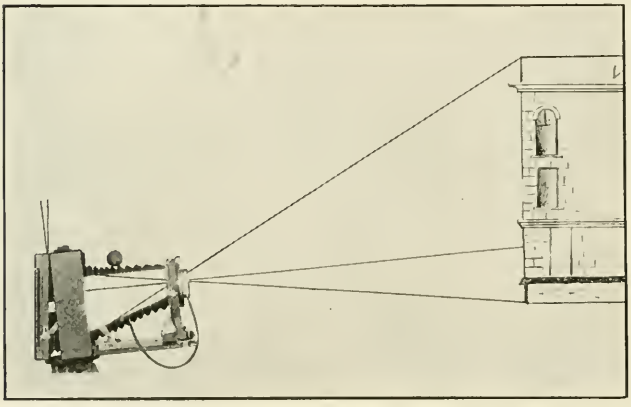


Illustration No. 18—See Paragraphs No. 61-64

Illustration No. 19—See Paragraph No. 69

mit the entire building in view without using the swing-back or rising front. The rear of the camera containing the ground-glass is tilted backward and is not perpendicular with the building. The face is receding from point of sight and the image on the ground-glass will appear broader at the bottom than at the top. This is explained as follows:

59. Line A is longer than Line C, for the bottom of the building is nearer the lens than the top. The nearer an object is to the lens the larger it will appear on the ground-glass. The top of the building being farther away will appear smaller than the bottom. The building if photographed with the camera in this position would result in the image being broad at the bottom and narrow at the top. See Illustration No. 16. This distortion is overcome with the use of the swing-back and rising front. If the camera employed has not the rising and falling front, nor swing-back attachment, the only way this building could be photographed to retain perfect rectilinear lines, would be to move the camera further away until with the instrument level the entire image would appear on the ground-glass. This, of course, would take much more foreground than desired, but is the only way the building could be photographed with a camera not equipped with these attachments.

60. If one could operate such a camera from some elevated point, thus dividing the space above the level of the camera with that below it, he would, of course, overcome considerable distance. If the camera is fitted with the rising front and swing-back attachment these difficulties are easily overcome.

61. With such an instrument, if you wish to include more sky or more foreground into the view without moving from your position, the front board containing the lens must be raised or lowered. In this case—see Illustration No. 17—we have all the foreground desired, but require more of the top of building and sky, consequently, by means of the rising front, raise the front board and lens to a height that will admit the top of the building and sky to the required degree. If the bellows is square shaped, the rays of light

will not be obstructed by the upper portion. If a cone bellows is used the front of the bellows as well as the lens must be raised, otherwise the bellows-folds will obstruct the rays of light. See Illustrations 17-18.

62. Illustration No. 17 represents a professional view camera with bellows and lens raised and swing-back tilted forward perpendicular with the building.

In Illustration No. 18 is shown a hand camera properly adjusted. Nos. 17 and 18 are practically the same with the exceptions that the one is a hand camera and the other a professional instrument.

63. When photographing extremely high buildings in cramped surroundings, or to admit more sky it may be necessary to tilt the camera upward. In other words, the entire front of the camera must be raised to an angle that will enable you to take in the entire building; or to secure as much sky as is necessary.

64. In order to retain your rectilinear lines it is necessary that the top of your ground-glass be pushed forward by means of the swing-back, parallel with the walls of the building you are photographing. (See Illustrations 17 and 18.) In pushing the swing-back forward, however, we meet the first difficulty. Just as soon as the axis of the lens is changed in relation to the ground-glass and the walls of the building, the sharper passage of light is disturbed, and to the eye appears distorted; but, with the proper stopping down and careful use of the swing-back perfect rectilinear lines will be obtained. It is therefore necessary, in order to retain rectilinear lines, that the ground-glass and swing-back of the camera be absolutely parallel with the walls of the building.

65. For the beginner, it is a good plan when photographing high buildings to first obtain your focus and lines as straight as you can get them without using the swing-back or rising front; then raise the front board sufficiently to admit the building and the necessary amount of sky into the view; and finally unscrew the clamp on the swing-back and tilt it backward and forward, noting the changing lines.

When you have them just right—parallel with the perpendicular lines on your ground-glass—fasten the clamp and you will have the building perfectly true on the plate.

66. Do not forget that in order to retain rectilinear lines, whenever you tilt the camera it is necessary to use the swing-back also. You will find, when using the swing-back, that the top of the building will be thrown entirely out of focus. This will be the case, particularly if the building you are photographing is extremely high, requiring an extreme use of the swing-back. In such a case focus for the lower portion of the building with an open lens, using no stop. Then slightly divide the focus between the bottom and the center of the building, and finally diaphragm (or stop down) with a stop small enough to bring the top of the building sufficiently into focus. You will thereby obtain sharpness in the remaining portions of the view.

67. **Horizontal Swing.**—The horizontal swing is attached to the regular view camera and is seldom used for ordinary work. However, when taking a view along one side of a narrow street, if difficulty is experienced in sharply focusing foreground and distance, the horizontal swing will aid you. Here again, you must exercise care or you may swing the wrong way, as it is very easy to become confused. If you will bear in mind to always swing toward the portion of the object at the greatest distance from you, you will never make a mistake. Until one becomes thoroughly familiar with the use of swing-backs it is a good plan to practice and experiment with the swing both ways, carefully watching on your ground-glass the effects produced.

68. **Linear Perspective.**—The picture that represents an object on a plane surface appearing precisely as the eye views it from a given point, is a simple definition of linear perspective. By following this rule in an effort to produce such a picture, you will be able to judge for yourself when pictures have their proper linear perspective. It is a fact that quite often the lens will produce a perspective which to the eye would appear very displeasing. This is accounted

for by the fact that the angle of lens used is frequently at variance to the normal angle of the eyes, so that a view which might not appeal at all to the eye may, when photographed, appear most pleasing. The same scene if photographed with a longer focused lens would, like the eye, require a greater distance to produce the proper linear perspective. It is advisable, therefore, in order to judge the linear perspective with the human eye to become familiar with the angle of the lens employed. As compared with the eye this can very readily be accomplished by observing the focus on the ground-glass from the same point of view as that of the eye.

69. **Perspective Lines.**—By Illustration No. 19 we will endeavor to illustrate prespective lines in the most practical manner possible. Line AA is what is known as the horizon line. The simplest explanation of the horizon line for a landscape view is that it is a line which apparently separates the sky from the earth. For an architectural view the horizon line is that line which when looking forward appears to be on a level with the eye, and to which all other lines are seen to converge. While the horizon line never changes and is always on a level with the eye, yet the appearance of the view, or building, can be improved by the proper selection of view-point, thereby raising or lowering the horizon line in the view. It must be borne in mind that photographing a building from a low view-point, thereby supplying a low horizon, will tend to heighten the building, and on the contrary a high view-point shortens it. Much depends upon the judgment of the photographer in the selection of view-point, as to the location of the horizon in the view, in order to truthfully represent the building photographed. The proper location of the horizon in architectural views is governed entirely by the selection of view-points.

70. **Vanishing or Converging Lines.**—Lines BB are known as the vanishing or converging lines, their vanishing point being where they meet on the horizon.

71. There are single and double converging lines. The

lines in Illustration No. 19 are double vanishing lines, as the lines converge from both ends. A single vanishing line would be one showing but one side of a long building, or a row of buildings on one side of a street. The end of the street or visible portion in the distance is the horizon, and the line following the tops of the buildings leading toward the horizon is the vanishing line, while the junction or meeting place of the vanishing line on the horizon is the pivot, or vanishing point. The horizon line being always on a level with the eyes, the angle of the vanishing line may change, yet the same relation of the horizon to the eye remains. This, therefore, can be relied upon as being the plane from which the object is viewed.

72. **Light, Shade and Shadow.**—Light is a most important factor in the composition of a picture. We have two classes of bodies, luminous and opaque. Luminous bodies are those which give out, or emit, light, the sun for instance. Opaque bodies are those which intercept or obstruct light, as stone, wood, etc. That portion of a building or opaque body which is exposed to the direct rays of the sun is called the illuminated part; while the portion from which the light is excluded is called the shade. The line which separates the illuminated parts from the shade is known as the line of shade.

73. The terms shade and shadow are very apt to confuse the photographer, although they differ materially. The interception or cutting off of the rays of light from any object produces shade. For instance, when the sun shines upon the front of a building the rear of that same building is in shade. The building being an opaque body intercepts the rays of light which fall upon the front of the building, thereby producing shade in the rear. Yet this shade gives no idea of the form of the object which intercepts the light. Shadow, however, may be defined as shade within defined limits, as it represents in form the object which intercepts the light. For instance, when we photograph a building while the sun is shining upon it, the cornices, projections and various trimmings intercept the light and cast a shadow

upon the lighted portions, which represent their shape and size.

74. **Angle of Light.**—The length of the shadow will depend upon the time at which the exposure was made, a high sun producing long shadows and a low sun short shadows. Shadows are of the utmost importance in architectural photography. Without them the beauty of the architectural view would be marred, if not entirely lost. The correct angle of light for ordinary work is about 45 degrees and should fall upon the front of the building and a trifle on the side. If the side of the building is plain with very little trimming, it will appear better in almost total shadow. If there is much trimming, the sun should fall upon it in a way that will produce graceful shadows cast from the trimmings and projections upon the building, thus adding to the architectural effect.

75. Definite rules cannot be given. Much, if not all, depends upon the style of the architecture and location of the building. All one can do is to give plenty of thought to the work. The building should be photographed when the light falling upon it shows boldness combined with harmony, always bearing in mind that dark shadows give strength to the results. A dark building may be photographed to the best advantage under a strong sun. A pure white building requires a weak sun. (See illustrations 4, 5, 6 and 7, of light and dark buildings photographed under strong sun; and the same buildings photographed with the sun under a cloud.) These illustrations will give you some idea of the advantage of a very strong sun on particularly dark buildings, as compared to weak sunlight.

76. **Relative Values of Different Markings on Diaphragms.**—There are two methods generally used in marking diaphragms or stops. The first expresses the ratio which the diameter of the opening bears to the focal length of the lens. For example, F. 16 means that the diameter of the opening is 1-16 of the focal length. By focal length we mean the distance between the lens and ground-glass when a distant object has been focused. In a rapid recti-

linear lens the distance from the diaphragm to the ground-glass will be correct. The focal length is dependent upon the curvature and combination of the lens.

77. The second method of stops is the Uniform System, the numbers of which bear the same ratio to each other as the area of the diaphragms which they designate. The Uniform System has been generally adopted by the manufacturers of hand cameras and amateur outfits. We here give a comparative table:

U. S. 1 equals.....F. 4
U. S. 4 equals.....F. 8
U. S. 8 equals.....F. 11
U. S. 16 equals.....F. 16
U. S. 32 equals.....F. 22
U. S. 64 equals.....F. 32
U. S. 128 equals.....F. 45
U. S. 256 equals.....F. 64

78. **Kind of Plate to Use.**—As better results are produced with ordinary plates by the average photographer, until one becomes thoroughly familiar with the workings of the ordinary plate, it is advisable not to attempt the use of specially prepared plates requiring more careful treatment. For general out-door work the ordinary plate should be used. If one has sufficient experience to use any plate, better results will be produced with the orthochromatic plate. In any case the plate used should be a fast one, as it will permit you to make quick exposures even on buildings of dark or non-actinic colors. When working in crowded thoroughfares quick exposures are always necessary, so the fastest plate must be used. While in a fast plate the latitude of the exposure is greatly reduced, yet one soon becomes accustomed to the speed of a plate, and the exposure resolves itself into a matter of secondary importance. The fast plate permits the use of small diaphragms. This is an important item in architectural work where a great deal of clearness and detail are absolutely necessary.

79. **Orthochromatic Plates.**—Where tone effects are desired, such as the proper rendering of color values of a house,

the orthochromatic plate is indispensable. The orthochromatic plate is sensitive to green and red, so where these two colors predominate this plate may be used to good advantage. For example, brick buildings surrounded by green lawns photographed with an orthochromatic plate will give better values than if the ordinary plate were used.

80. **Isochromatic Plates.**—The isochromatic plate is more sensitive to green and yellow. With either of these plates much clearer sky effects can be obtained. Clouds may also be more readily preserved with these special plates than with the ordinary kind. However, until one becomes familiar with the values of special plates, it is advisable to use the ordinary fast plates.

81. **Exposure.**—Before making the exposure, one word more of advice as to focusing. All architectural views should be absolutely sharp. We advise, therefore, the stopping down, or the using of diaphragm F. 16, or U. S. 16. Sometimes with a cheaper lens where the lens has not the covering capacity, and it will not cut sharp to the edge, it is necessary to stop down to F. 22, or U. S. 32. The exposure necessary is, therefore, governed first by the conditions of the strength of light and shadows in the view and second by the size of the stop used.

82. There are a number of exposure meters in use, also tables of rules governing the length of exposure. We do not recommend adopting either of these. On the contrary we advise the keeping of a memorandum of all exposures, conditions under which they are made, size of stop, etc., and allow past experiments to be your guide for future exposures. By carefully following instructions one will soon be able to judge the proper amount of exposure necessary to produce the best results. You must be governed, however, by the following rule: If you are stopping down to U. S. 16 and are giving ¼ second exposure you must when using stop U. S. 32 give four times the exposure at least, or 1 second. Usually ¼ to ½ second is sufficient in a bright sunlight with a medium stop. The higher the number on the stop the smaller the opening, consequently, a longer exposure must

be given. When more than ¼ second exposure is required, we advise the use of *bulb exposure.* With the bulb exposure, by pressing the bulb the shutter is opened, and when releasing it, it is closed. You will soon accustom yourself to measure the time required very accurately and by instinct open and close the shutter properly.

83. **Developing.**—In the developing of an architectural view the most essential point is to produce a negative with snappy highlights, shadows clear, but filled with detail. Avoid flat negatives. We recommend, in addition to the regular formula for developing given in Volume II., that you use a few drops of a 10 per cent. solution of bromide in the developer. This bromide adds snap to the highlights and the shadows are held clear throughout the developing. If you find the plate slightly under-timed reduce the strength of the developer by adding double the quantity of water. Never under-develop an architectural view. It would be far better to slightly over-develop and then, if necessary, reduce the plate after developing.

84. **Practice Work.**—In applying this instruction select a residence, or building of any description. One with projections, porches, etc., is the best. Bear in mind these few facts.

85. First, an architectural picture should be made in bright sunlight, otherwise you cannot retain the effect of trimmings, cornices, etc., and the building will appear flat in the print. Sunlight supplies highlights, shadows and proper contrast. Avoid crowding a building or object on the plate. This is important. Allow plenty of space around the building, thereby supplying better atmosphere.

86. Obtain a careful focus and exercise care when using the swing-back. See that the picture is perfectly perpendicular on the ground-glass. Use proper stops.

87. Make several views of the same residence, selecting varied view-points, making the exposures at different times of the day to show the effects of various angles of light. Take one residence in particular and study its lightings and various view-points most carefully, making nega-

tives of the most marked effects. These records will be of great importance to you by more thoroughly impressing upon your memory the preceding instruction. When thoroughly familiar with this work, as applied to one particular color and type of building, it will be advisable to proceed in like manner to make a few photographs of another building. For instance, if the first one was light in color, the second should be quite dark, as this will give you a practical knowledge of the method of handling the two extremes.

88. Proof prints should be made from all experimental negatives, and full data placed on the back of each. File these proofs in your proof file for future reference.

## CHAPTER III.

## ARCHITECTURAL PHOTOGRAPHY.

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### Part III.

### Detailed Instruction.

89. The Photographing of Buildings with Figures Introduced, Public Buildings, Commercial Buildings, Photographing Streets, Photographing High Buildings in Sections, etc., are the subjects of this instruction.

90. Carefully follow the instructions given in Part II, Architectural Photography, the photographing of residences and ordinary buildings, and the instruction given on point of view, perspectives, lines, location of horizon, light, shade and shadows, the effects of long and short shadows, etc. All of the above will assist you in preparing the work of Part III, Architectural Photography.

91. **Photographing Residences with Figures Introduced.**—In Part II you were instructed to photograph a residence under strong sunlight, requiring very short exposure. In this portion of the lesson, Part III, the principal object is to give you experience with exposure and development of plates made under other conditions—the photographing of residences with figures introduced. As you have learned in Part II, all pictures must have some principal object in the view. In the photographing of buildings and residences, no matter what the surroundings may be, they must always be secondary to the principal (the residence). Even where the presence of life is suggested, the main feature is, of course, the building, and it must predominate.

92. For this portion of the lesson, select a private residence. In choosing the residence you must remember the instructions of Part II, and profit by the practice you have had in performing previous lessons.

93. In this picture admit some figures in the view, arranging them so they will not be crowded or scattered all over the space. Do not attempt to arrange them in groups or pyramids and remember they must occupy only a secondary position in the general view, forming a part of the whole picture.

94. Each figure must be there for a purpose and the picture must tell its own story. Exercise your best judgment in the arrangement. Bear in mind when introducing figures into an architectural view, they must be placed there for a purpose. They must add to and not detract from the general view. Therefore, to admit too many would spoil the view, and to have figures appear as if in the act of standing for a picture would also spoil the effect. You must show the object for which the picture is made.

95. For example, if you made a picture of a residence, you might have a couple of ladies in the doorway, one about to leave and bidding farewell to the hostess; or a postman delivering a letter. In this way you would be telling a story. A third or fourth subject could be introduced to good advantage. If in the summer months, the gardener with a lawn mower at work on the lawn, a child with a doll playing by some shrubbery, or several children apparently at play on the lawn—all these things add to the beauty of a picture and assist in breaking the monotony of a plain view.

96. By the introduction of figures into a view, in order to show action on the part of the subject introduced the exposure must necessarily be quick, and bearing in mind that the figures are now a part of the view, more softness is desired and, generally, you can use a large stop and yet secure a sufficient sharpness of focus. As some lenses work with plenty of sharpness with a larger diaphragm than others, a uniform size stop cannot be given for all lenses, but usually a stop varying from U. S. 4 to U. S. 16 will

prove satisfactory. Bear in mind that you want snap, detail, and contrast as well as depth. Remember, the smaller the stop used the smaller will be the opening, with a corresponding decrease of illumination upon the plate; thus, a longer exposure must be given. For instance, if by using stop 8, you can make a full-time negative in 1-25 of a second, for a 16 stop you must give about two times as much, or about 1-10 of a second.

97. **Time Exposures.**—The conditions for the work up to this time have required quick exposures. It is important that you become thoroughly familiar with all conditions requiring various exposures. In order to acquaint you with the advantages of and necessity for time exposures, after having made an exposure of a residence with figures introduced, gather your subjects together, somewhere in the shade, perhaps on the side steps, or on one end of the porch, anywhere where they will be protected from direct sunlight. Always arrange the group facing the direction of the sunlight. Never point the camera towards the sun, but rather have the sun back of, or to one side of the instrument. Even if it is in the shade it will be apt to cause a haze over the plate. Arrange your grouping in pyramidic form, one hinging upon the other. When arranging such a group, always place the principal member first, then group one or two persons around him, or her, forming a pyramidic group of two or three. Then if there are more members, add them in a like manner in additional small groups on each side of and subordinated to the principal group. Bear in mind there should always be a principal member to every group, that your picture must tell a story, and the principal object of the picture must be visible at first glance.

98. These groups are made in the shade in order to produce more softness and roundness and overcome the squinting of eyes, which would be the case if they were made in bright sunlight. If it is necessary to make a group picture in sunlight you can overcome, to a certain extent, the squinting of the eyes by arranging the group with the sun falling from the side. Have the subjects arranged with

faces turned from the light. This will throw the faces principally in shadow. Then by full timing and careful developing you may overcome the contrast and at the same time the eyes will not appear squinted. The arranging of the group in the shade will necessarily prolong the exposure. While the preparing of this portion of the lesson will afford some experience in the arranging of groups, yet the principal object is to give you a training with exposure and development of plates made under different circumstances.

99. **Exposure.**—When making an exposure of a residence, under strong sunlight, you judge the time required by the strength of the sunlight on the building, and time for the highlights. By highlights we mean the portion of the building which appears the brightest. If the sun be strong, the highlights on the building will show great strength and the shadows in consequence would be very dense. The fact that the shadows are dense adds to the beauty and appearance of the residence, making it necessary to retain the shadows in their dense form. Because of this you expose the plate only long enough to fully time the highlights, allowing the shadows to take care of themselves. Should you time for the shadows, which ordinarily require four times the exposure, you will over-time the highlights. The highlights and shadows will run together, caused by the fog produced by the over-exposure of the highlights. When photographing a group in the shade, you have no strong highlights, but many half-tones, the strength of the light being very much reduced. In such a case you must time for the most dense shadows, as the difference between the highest lights and the most dense shadows, if all are in subdued light (or shade), will be so little that it does not affect the values of either. When photographing groups, objects or any object, in the shade, calculate on sufficient time to give nice detail in the shadows.

100. If you should make an exposure of a residence in bright sunlight, exposing 1-25 of a second, to fully time a group made in the shade you would expose 1-5 of a second, or about four times as long as you would if subjects were

Illustration No. 20—See Paragraph No. 102

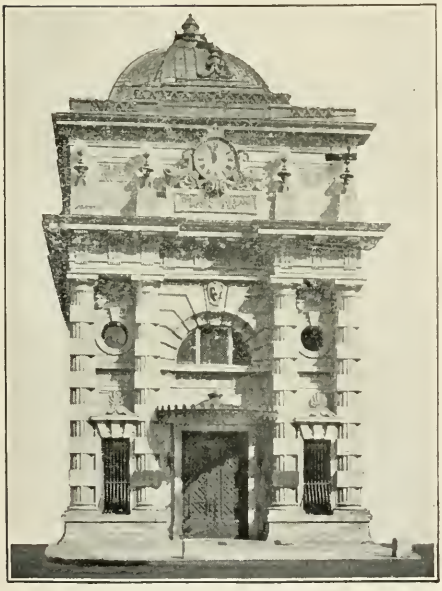

Illustration No. 21
See Paragraphs No. 30 and 106

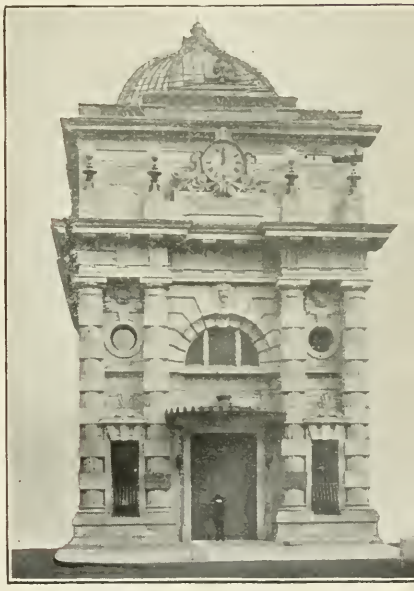

Illustration No. 22
See Paragraphs No. 30 and 106

"DAY IS FAR SPENT"

STUDY No. 8—See Page 310

BY C. F. CLARK

placed in the sun. Much, of course, depends upon the subject and drapery as well as surroundings. For instance, if you should have green foliage for a background, it would necessarily prolong the exposure to double that required for a more neutral tint. As green foliage absorbs the light more and photographs blacker than black painted walls, where such backgrounds exist you must time accordingly.

101. **Stops to Use.**—The size of the stops to use in making group pictures will depend upon the lens employed. For portraiture you do not want extremely sharp, wiry effects, so focus with an open lens. In arranging your group, should it be a large one, adopt the form of a semi-circle, placing all members of the group at about the same distance from the lens. In this way you will be able to obtain a good focus, and sufficient sharpness with a medium sized stop—usually F. 8 will be sufficient. With this large stop, 1 second exposure should be about right.

102. **Commercial Buildings and Business Thoroughfares.**—In photographing commercial buildings and business streets, proper effects can only be obtained when there is animation and life presented in the picture. For instance, they should show people looking at window displays and walking along the sidewalks, wagons and cars in motion; in fact, everything that goes to make a business thoroughfare. If a single building bearing a flag staff is being photographed, the flag should be flying. If it is a factory and there are smoke stacks, smoke should issue from them. To illustrate: Compare the effect of a picture of a large department store made when the streets are deserted, with one where the people are looking in the windows, customers going in and out of the store, express wagons delivering, etc. You will readily see that the last picture will tell a story, while the former is misleading and gives a false impression. (See Illustration No. 20).

103. **Public Buildings, Banks, Office Buildings, Churches, etc.**—In photographing such buildings, or street scenes, it is absolutely necessary that the lens used be a rapid one. The rectilinear type is the best, as it will cover

the entire plate sharply without using a small stop. The extreme speed of the shutter should be applied, a fast plate should be used and, of course, such pictures should only be made in bright sunlight.

104. Public buildings are usually located along busy thoroughfares and frequently it is difficult to obtain the proper light to give as much prominence as possible. Bank buildings, for instance, are usually low and squatty and should be photographed under a high sun, which will supply long and almost perpendicular shadows. With a high sun and a low view-point the building will appear tall.

105. **The Best Time of Day for Making Architectural Views.**—At mid-day the sun, being directly overhead, will hardly lend any artistic shadows to the picture. The shadows on the building caused by projections and trimmings, will be long and perpendicular. Usually short shadows in proportion to the size of the building produce the best results.

106. **Making Exposures at Mid-day.**—There are buildings, however, so located that if photographed near the noon hour the projections supplying long perpendicular shadows produce good effects. We reproduce herewith such a building. (See Illustrations Nos. 21-22). As this building is quite wide in proportion to height, it appears to better advantage photographed at or near noon, when the sun is highest. You may then obtain the longest shadows possible and these add to the apparent height. This building faces southwest and if photographed an hour earlier would have no sunlight on the front, an hour later none on the side. Besides, being located in a business block, the buildings opposite would then throw heavy, objectionable shadows into the view. Illustration No. 22 was taken a trifle later with the sun under a cloud, and is a good example of the flat, undesirable results obtained by photographing a building of such proportions with no long shadows to add to the height and give relief to the ornamental decorations. Although Illustration No. 22 was diaphragmed down in order to accent

the shadows, and the plate was developed so as to obtain all the strength possible, it does not compare with plate No. 21.

107. **Cloud Effects.**—Where clouds are to be retained the exposure must be a rapid one. The building should be photographed at quite a distance to obtain more of a general view, admitting plenty of sky and foreground. There will then be no dense shadows to overcome, and an exposure sufficient for the sky will be ample for the building and foreground.

It is not often possible to obtain clouds at the time you are prepared to make the picture. In such cases if clouds are desired in the view they may be printed in from a cloud negative.

108. **Churches.**—Churches, like private residences, are usually built with considerable space surrounding them, and, therefore, generally permit of being photographed in the same way.

There are times where churches are so located that strong sunlight does not fall on the front part; then again, the colors of the building are so dark and non-actinic that quick exposures cannot be made. In such cases it is best to make the photograph with a slightly clouded sky. In order to increase the contrast between the highlights and shadows, use a smaller stop and give the same time that you would if a stop a size larger was used. In this way you may slightly under-time the shadows, making them stronger (blacker), thereby giving more contrast.

109. **Contrast and Snappy Effects on Cloudy Days.**—You can greatly increase the contrast between highlights and shadows, even in weak sunlight, by using a smaller stop than usual, giving the same time as if the sun was brighter. In this way you accent the shadows, thereby producing more snappy results. A good rule to follow when you desire more contrast in the view, is to use a smaller stop. Experiment by looking on the ground-glass with the different size stops. Whatever effect is visible on the

ground-glass can be secured on the plate by correct exposure and proper development.

110. While there is considerable latitude for exposure in architectural photography, one should aim for as nearly correct exposure as possible. When judging an exposure, we will say, for instance, your highlights are very strong and the object is light-colored; 1-50 of a second would be sufficient to give you a full-timed plate with snappy shadows. If, however, the object is of a dark, non-actinic color, and you should time for these colors you would expose for a full second. In doing so you would over-time the highlights. Therefore, the time should be divided. If 1-50 second is sufficient for highlights on a light colored object, and 1 second necessary for full time on a dark colored object, ½ second would give you sufficient detail in the shadows of the dark colored object and would not injure the highlights.

111. Usually in photographing high buildings, business blocks, etc., the extreme use of the swing-back is required in order to obtain rectilinear lines. To produce sharpness on the plate, a small stop must be used.

112. **Moving Objects.**—If people are passing the building to be photographed, it is advisable to use the smallest stop and give an accordingly long exposure. Persons passing, as long as they keep moving, will not obstruct the view nor will any blur be registered on the plate. If the exposure is a short one, the blur will be registered, but with a long exposure the difficulty is overcome. See Illustration No. 24. If there are crowds of people passing, it would be impossible with any length of exposure to overcome the blur, but with a few pedestrians the view is obstructed so little that the plate is not affected.

113. With an automatic shutter, during a long exposure you may close the shutter while persons are passing and open immediately after they have passed. As the shutter will not jar the camera there will be no vibration, so the shutter can be opened and closed as often as necessary.

114. **Combination Pictures.**—There are times when the

Illustration No. 23

Illustration No. 24
See Paragraph No. 112

height of the building is so great that the distance in which a camera can be worked from the ground level is insufficient to take in the entire height. To overcome this it will be necessary to make the view from an elevated point, generally in an opposite building, from a third or fourth floor window. This, of course, raises the horizon line but is unavoidable.

115. In large cities, where the streets are narrow and buildings are high, a front view of a building is frequently desired. Such a picture must be made in sections. In a case of this kind the camera must be operated from an opposite building as nearly one-third the total height of the building to be photographed as is possible. The camera must be perfectly level for the first exposure and the front board or rising front must be lowered to the extreme, taking in the base of the building and the walk below and as high up as the first plate will cover. If it is impossible to reach the street without tilting the camera downward, it will be necessary to bring the swing-back into play, tilting it backward until the ground-glass is perfectly perpendicular with the building. After the first exposure is made—without moving the tripod but raising the front board and perhaps, leveling the camera and adjusting the swing-back—take another section, making due allowance for sufficient lap to trim and square nicely. This time it will hardly be necessary to use the swing-back.

116. After the second exposure raise the front board or rising front sufficiently to admit of the third section, and, if necessary, make use of the swing-back to give perpendicular lines. If the third section does not take in all of the building, a fourth section can be made by raising the rising front and lens to its limit, and possibly tilting the camera may be necessary to admit the entire building into the view. The swing-back should be used carefully, as the ground-glass must be perpendicular with the building in every exposure, or distortion will result.

117. Negatives of the different sections can be squared and cut to match perfectly. All of these negatives may be

placed in a large printing frame, permitting one solid print to be made from the combination. With a little dodging and spotting, lines that may show the joining can be removed. If platinum paper is used for printing, applying a little crayon, or using the air brush will enable one to work out any line visible in the print.

118. **Developing.**—Architectural views made under a clouded sky with small stops and long exposures should be developed slowly. In order to restrain the plate and keep it free from fog, several drops of a 10 per cent. bromide solution should be added to the developer. This will keep the shadows clear, and a splendid crisp negative will be the result.

119. **Recording Results.**—It is very important that careful record be kept during all experiments. The time of exposure, conditions governing light, number of each plate and kind of plate, developer, etc., are of great value; for upon the accuracy of these records depends, to a great extent, your future success, as you should profit by these first results. Make good proof prints from each experiment, making notations on the back and preserve them in your proof file for future guidance.

# CHAPTER IV.

## DIFFICULTIES—ARCHITECTURAL PHOTOGRAPHY.

120. **Obtaining Proper Angle of Light.**—This is thoroughly taken up in Paragraphs 74. Study the effect of light at different times of the day and when you find the time that projections and trimmings stand out in bold relief, make an exposure. If the building is high or low, watch the effects of the sun at various times of day. It is a good plan to study this at all times, even though you do not intend to photograph a building. It is a good practice and by so doing you are training your eye. In a short time you will have little trouble in selecting the proper time for making exposures and obtaining correct angles of light.

121. **Obtaining Straight Lines on Ground-glass.**—If your camera is equipped with a swing-back, you can readily overcome this difficulty. First place your camera in proper position to take in the entire building, making use of the rising front to which the lens is attached. Next push out the swing-back at the bottom, providing it is a swing-back which is hinged or pivoted at the center. If the back swings from the bed of the camera, you must tip the back of the camera forward. In either case adjust the swing-back so that the vertical lines will come true with the lines of the ground-glass (focusing screen). If your camera is supplied only with a rising front, place the instrument perfectly level and then push up the rising front. If the building is very high, it is advisable to make the exposure from a second-story window on the opposite side of the street. This should always be done where one has neither rising front nor swing-back attachments as, for example, in a box or a hand camera. If there is no convenient building or raised ground on the opposite side of the street, you had better not attempt to photograph an extremely high building as the resulting picture will be bad. The building would be broad at the bottom and narrow at the top and in extreme cases would assume the shape of a pyramid.

122. **Working in Close Quarters.**—When meeting this difficulty, which is generally caused by narrow streets, the only thing you can do is to use a wide-angled lens, but you must bear in mind that the perspective will suffer and it is advisable to make the image very small, because in a small image the false perspective will not show so strongly.

123. **Obtaining Sharp Focus on Extreme Distance.**—Always focus on the front of the building. Get this as sharp as possible without the use of a stop or diaphragm, and then stop down until the extreme distance is sharp. In such cases this is entirely governed by the cutting depth of the lens, but in most cases stop U. S. 32 or F. 22 will produce the desired results.

124. **Image Very Thin and Hazy on Ground-glass (Focusing Screen).**—If the camera is pointed toward the sun, the lens is affected as is the eye when looking directly into the sun. Everything appears hazy and dim. If the sun is to the extreme side of the camera, a sun ray may strike the edge of the lens tube and reflect directly into the lens, causing the above effect. In mid-winter if the camera is taken from a warm room into the cold, the change of the temperature will cause a moisture to gather on the lens and also on the ground-glass. All lenses, but more particularly those that are mounted closely, like the anastigmat variety, are extremely sensitive to the change of temperature. Moisture gathers very rapidly on them, and every time the moisture is allowed to dry it leaves a slight scum, a scum which is similar to that found on windows which have been steamed. This scum will in time affect the working of the lens, producing effects of both haziness and halation. Therefore, always carefully wipe with a soft cloth both lens and ground-glass before making an exposure. Occasionally take the lens apart and wipe the inside lens. You will often find it is necessary to use alcohol to thoroughly cleanse the lens.

125. **Obtaining Less Foreground or Sky.**—This difficulty can be readily overcome by the use of the rising front to which the lens is attached. By raising it you will obtain more sky, and by lowering, more foreground. If the camera does not possess a rising front, lower the tripod by either spreading or shortening the legs for more foreground, and raising for more sky.

126. **Sky in Negative Too Thin, Producing a Print With Dark or Gray Sky.**—This is always the result of over-exposure and then not treating the plate for an over-exposure during development. (See lesson on Developing Over-exposures, Vol. II.)

127. **Building Having the Appearance of Being Roofless.**—This effect is produced by placing the camera too near the building to be photographed, and then pointing the camera upward. (See Paragraphs 48-49, Part II, Chapter II.

128. **Judging Proper Exposure.**—Only close observation and practice can teach you this. A good plan is to keep a memorandum of all exposures, time of day, condition of light, etc., etc. When during development you find a plate under or over-exposed, make an additional note under the original memorandum of this exposure and be governed by this experience next time you are making an exposure under the same or similar conditions. This is a good practice and you will, after some experience with different conditions, so train yourself that there will be little or no guessing about exposing.

129. **Fogging of the Plate During Development.**—With ordinary exposure there is little difficulty with this. The fog generally produced is a chemical fog caused by over-exposure. (See lesson "Dry Plate Developing," Vol. II.) During development it is advisable to keep the tray containing the plate away from the direct ruby light. During the development of an over-timed plate it is a good plan to cover the tray, being careful, however, to rock the tray occasionally.

130. **Long Shadows.**—To obtain long shadows on the building it is necessary to make the exposure when the sun is high. All projections on the building will then cast long perpendicular shadows on the building and have a tendency to make a low building appear higher.

131. **Short Shadows.**—To obtain short shadows on a building the exposure must be made when the sun is low. All projections will then cast horizontal shadows on the building and these shadows will have a tendency to make a tall building appear lower.

132. **Effect of Horizon.**—If the horizon is low the building will appear high. If it is high the effect will be just the reverse.

133. **Arranging Figures in a View.**—This difficulty you can readily overcome after a little experience. Always introduce the subjects in such a manner that they will appear occupied and not as though they were having a picture taken.

134. **Figures Very Small When Entire Building is Shown.**—As this is not intended to be a portrait of subjects introduced, but a picture of the building, the building being many times larger than the subject, you will not be expected to make the figures appear large. If they are placed well in the foreground they will appear larger in proportion to the size of the building. The figures are only introduced to add life to the picture.

135. **Arranging Groups in Pyramidical Form.**—By this we mean a group arranged in such a manner that it is wide at the bottom, terminating in a point at the top. For example, if you have a group of ten people, arrange the principal and two other figures first. The

head of the principal subject thould be a trifle higher than the other two and one of the two a trifle lower than the other, both reclining towards the principal. These first three constitute a little pyramid and are the principal of the group. Add groups of two on either side below the principal group, and then fill in the remaining three in the rear of the principal, being careful that each subject is placed between and not back of each other. In this way you will form a number of pyramids in the same group with the end members all reclining towards the center.

136. **Judging Exposure for Groups.**—Only careful observation and keeping a memorandum of exposures can teach you this. If you have made an exposure and find in the developing that the plate is over-exposed, make a note of it under the memorandum you have already made of this exposure, and then when you have another group to make under the same or similar conditions, give less exposure and in a very short time you will be able to properly judge correct exposure.

137. **Background of Group Very Light, Faces of Subjects Dark.**—This effect is produced when you face your subjects in the wrong direction. Even though the group is being taken in the shade, you should always face them in the direction from which the strongest light comes, or where the sun would be if it were shining. This rule also holds good on a cloudy day. If you fail to do this the light will be stronger behind the group than in front, consequently you will produce an effect of halation, which makes the faces appear dark and the background light.

138. **Understanding What Colors are Non-Actinic.**—The colors which are non-actinic are red, black, green, yellow, and any colors with any of these shades in them.

139. **Subjects Passing by Building Being Photographed Causing a Blur.**—The only way to overcome this is to use an extremely small stop and make frequent exposures. When you find that there are only one or two subjects passing and they are not directly in front of the lens, make your exposure, simply opening and closing the shutter. You may have to do this many times before you get the required exposure. Oftentimes when photographing the interior of stores it is necessary to uncap the lens or open the shutter a dozen or more times in order to get half an hour's exposure, but the result that is produced well repays for the time spent, as there will be no sign of any blur in the picture.

140. **Center of Plate Sharp, Ends Out of Focus, Appearing Blurred.**—This clearly shows that the lens does not cover the entire plate or it was necessary to use the swing-back to an extreme. This difficulty can be overcome by using a small stop.

141. **Objectionable Shadows on Buildings.**—To overcome this difficulty it is necessary to select a time of day when the buildings and trees on the opposite side of the street do not cast a shadow on the building which is being photographed.

142. **Building Standing on Level Ground Appearing Elevated in Picture.**—This effect is generally produced by the camera being placed too low, supplying too much foreground.

143. **Tripod Slipping on Polished Floors.**—When impossible to make the tripod legs hold to the floor you should lay a small piece of carpet or a rug down and stand the tripod on it. Small flat blocks of rubber may be employed for this purpose, or a triangular frame made of wood, the sides being not less than 30 inches long.

## CHAPTER V.

## LANDSCAPE AND GENERAL VIEW PHOTOGRAPHY.

144. **Introduction.**—We have been taught that all our relations with the outer world are maintained by five senses —sight, hearing, smell, taste and feeling—but it is now a very generally conceded fact that a larger number of senses exist.

145. *Artistic Perception* should by all means be included among the additions to the list of senses, as it embodies the power or faculty to see and, to a greater or less extent, interpret the beautiful in Nature and in Art. This is certainly a thing quite apart from the mere physical sense of sight.

146. The difference between artistic sight and ordinary sight is that, generally speaking, mankind does not look for the beauties and impression of truths that the artist strives to see and interpret. The average man uses his eyes as a means of securing information; for instance, if you wish to know what time it is, you look at the clock; but if you are careless about the time, you may look at the clock and not see the hour it marks.

147. What you actually see is governed by very complex conditions of faculties, experience and education. What one person sees another either does not or cannot see. As the world in general is not thinking of, nor looking for, beauty in Nature with reference to Art, it seldom sees the aesthetic side at all. Sometimes, however, it is observed, but in a very imperfect manner.

148. On every side we see persons, cameras or kodaks in hand, ready to "snap" at anything, regardless of interest or beauty expressed in the subject. Perhaps it is an

historic building, a monument, a bridge, a bit of landscape which holds charms of childhood days; or something else you can give a name. But even in these instances little thought is given to obtaining the most pleasing effect.

149. The predominating thought of the photographic enthusiast seems to be concentrated on having the house, or whatever it may be, come in the center of the plate, with nothing in the way. Such people have yet to learn to *see* in an artistic sense.

150. It is said that the artist, like the poet, has to be born, not made, and in some individuals the sense of artistic perception seems to be perfectly natural, while in others it may exist in only a latent degree, waiting for an opportunity to be developed.

151. Whatever may be the inborn gift, actual success as an artistic worker can only be attained by careful and conscientious study of Nature and of Art. He who studies the character of form, light and shade, and examines and compares their effects and the manner in which they are combined and arranged, will be all the better able to discover and enjoy natural scenery. No matter how much you might otherwise have appreciated it, your enjoyment will be greatly increased if you look at Nature with the eye of an artist, and know why it is beautiful.

152. Men see but little of what is before their eyes, unless the mind is trained to use the sight in a special way. If an artist, a scientist, and an untrained and unobservant person take a walk into the country together, the attention of the artist will be immediately directed toward the effects of light, shade, form and tone; the scientist may have his attention concentrated just as intently, but what he sees will be of a different character entirely; while the unobservant person, as far as mental effect is concerned, will see absolutely nothing at all, and might as well have gone along with his eyes shut.

153. It is the business of the *pictorial photographer* to *see*, and by seeing appreciate what this sense has favored him with. This power of *artistic perception* is best cultivated

by earnest study of the principles of Art which have been the guide in producing the great works of famous artists.

154. You should take advantage of every opportunity to visit picture galleries, exhibitions of art work of all kinds, and of studying the reproductions of old masters, which may be found in practically all of the modern magazines. A careful study should also be made of the illustrations in this library, as they are the results of the efforts on the part of leading photographers to learn and apply artistic principles in the most simple and pleasing manner.

155. This Volume III should, of course, receive your most concentrated attention, as it contains the actual training that will lead you to see, appreciate and apply the artistic sense to your photographic work. Do not allow the study of Art nor the principles which you acquire through the study of the following chapters to bind you and keep you in a hard, straight "rut." This instruction should simply act as a guide to follow and assist you in expressing your originality.

156. We cannot do better than to impress upon you, if your aims are pictorial, the necessity of constant study and application. The ease of performing the various operations in photography is often fatal and apt to give the idea that success may be attained with little effort—but nothing could be wider of the mark. Aim high and do not be discouraged by occasional failures. Study nature and the following chapters, and good work will be your reward.

## INFORMATION ON CHOICE OF APPARATUS AND MATERIAL.

157. In no field of photographic work is it possible to use apparatus as inexpensive as in the making of pictorial landscapes. It is, however, always advisable before making an exposure to thoroughly understand the various kinds of

apparatus that will assist most materially in securing the best results. It is not necessary that the camera should have many attachments, but it is important that the bellows be of sufficient length to accommodate a long focus lens. Such attachments as the rising and falling front and sliding front, have their advantages and will often come into play. The swing-back is also a desirable feature, but not absolutely necessary.

158. **Selecting the Lens.**—A special lens is not required for landscape work. In fact a single lens cell will answer every purpose, as it is not necessary to have it corrected for the various defects found in the average cheap single lens, which is imperative in the case of architectural photography. In photographing landscape scenes in which there are no moving objects, an exposure of considerable length may be given if required. The single lens can be stopped down sufficiently to secure any desired depth of focus. Bear in mind, however, that artistic effects are secured by a certain amount of diffusion, which is lost if the lens is stopped down to too small an opening.

159. **Focal Length.**—The lens attached to the average hand camera is really a superior instrument for artistic landscape work, to the more expensive anastigmats. If, however, it is desired to secure a lens especially for landscape photography there are two primary considerations which must be taken into account; *focal length* and *angle of view*. The question of *focal length* presents some difficulties, yet it can be varied at pleasure between indefinite limits. It is better to employ a lens of considerable focal length—one that is twice the length of the greater dimension of the plate will be approximately correct, as it includes an angle of about 35 degrees. Pictures taken with a lens giving a narrow angle, present a perfectly natural appearance, and may be viewed at any distance, but one made with a wide or medium angle lens must be viewed at close range. Even then the foreground is sure to be exaggerated, and perspective lines are so increased that a square becomes oblong and a circle an ellipse. A short focus lens is, of necessity, a wide angle one.

BRIDGE

Study No. 9—See Page 310

By J. H. Field

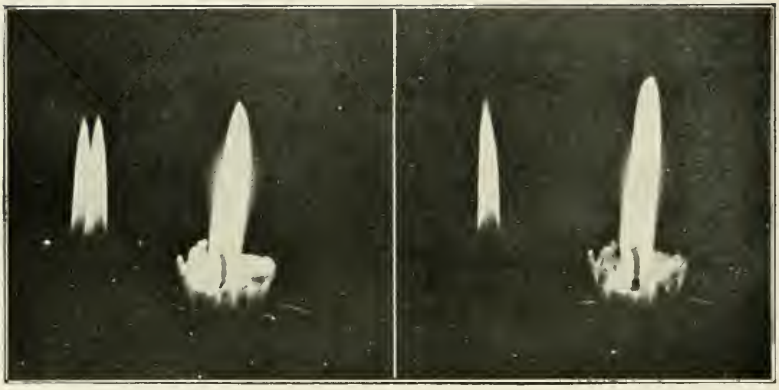

Illustration No. 25 Illustration No. 26

See Paragraphs No. 164 and 167

This type of instrument gives too great a depth of focus, rendering all planes in the scene equally sharp.

160. **Angle of View.**—The question of *angle of view* has much to do with what has previously been said regarding the focal length of the lens; yet it is of sufficient importance to consider it separately. *The angle of view of the resultant picture* is determined by the focal length of the lens, compared with the size of the plate upon which it is to be used. *The angle of view of the lens means* the greatest angle that this particular lens is capable of giving when used upon the largest plate it will cover. Exactly the same results will be secured on a 4 x 5 plate when using a narrow angle lens of 5 inch focus, as a wide angle one of the same focal length. However, a wide angle lens of 5 inch focus may be stopped down to cover sharply to the edge of an 8 x 10 plate, or even larger.

A narrow angle lens of the same focus, regardless of stopping, could not be employed for any larger plate than it was originally intended to cover.

161. **Dust.**—As dust causes pin-holes on the negative, you must be sure that your camera, plate-holders and carry-case have been carefully dusted. In this way you will save yourself a great deal of time and secure much better results.

162. **Halation.**—The cause of the halation in the images produced on modern dry plates is due generally to the reflection of the light from the back surface of the glass.

163. In the majority of cases halation is regarded as a fault, and one that needs correction at any cost, but we disagree with that class of workers who hold rigidly to this belief. We do not, of course, advocate the wholesale spread of bright light that is bound to be suggested in bad cases of halation when photographing certain difficult subjects, but that a small amount of halation is perfectly natural and necessary for pictorial purposes cannot be denied by any one who uses his eyes and observes closely the phenomena of nature. Let any observer, for instance, look at the bright sky through a net work of fine branches or foliage. Not only is the spreading of light in the margins of the shadows

observable with the eye, but this encroaching on the shadow outlines appears perfectly natural and correct. Why, therefore, every endeavor should be made to make this different in the rendering of the subject by photography, it is difficult to say. Halation is, to a certain extent, perfectly normal, and the lens sees no more than the eye. The dry plate, however, occasionally exaggerates what the lens sends to it, and it is for the correction of this exaggeration only that steps should be taken for dealing with halation.

164. If you will take a piece of ordinary glass, perfectly clean, and hold it at an angle so that the reflected image of a bright object is seen on its surface—the flame of a candle for instance—it will be observed that there are two images present and they do not coincide. (See Illustration No. 25). The brighter image is the reflection from the top surface of the glass, and the secondary image is reflected from the back surface. The distance that separates these two images depends on the thickness of the glass and the angle at which they are received. It follows, therefore, that the bright parts of the image projected onto the plate, after passing through the film, are reflected back onto the film again, and fog it. As this fog is not clearly defined it produces the effect called halation, and when a bright light strikes near the margins of a plate, this spreading of the light is generally worse, as the angle is greater.

165. Theoretically, of course, halation, under these circumstances, should not occur if the bright light is in the center of the plate, i. e., directly opposite the axis of the lens. There is, however, another form of halation, that also manifests itself in the modern dry plate, and one that no amount of backing can remove, and that is the lateral spreading of the light in the film itself, or irradiation. This will appear even in the thinnest film.

166. **The Effect of Backing.**—The immediate effect of the use of backing can be easily observed by again taking the piece of clean glass and holding it at an angle, to obtain the reflection of a candle flame or other bright light.

167. If a dab of backing (as described later) is spread

over the under side of the glass, the secondary image will promptly disappear, leaving only the bright upper surface image (See Illustration No. 26). The image on the under surface has been absorbed by the backing, and if the mixture is properly constituted so that it has the same refractive index as glass, every ray of light that strikes the surface coated with it will be absorbed instead of striking back and fogging the image above.

168. **Non-Halation Plates.**—Numerous methods have been advocated, from time to time, to prevent undue halation. At the present time most of the leading dry plate manufacturers supply their plates prepared with two emulsions, the one next the glass being very slow, while the upper emulsion is of regular speed. When the image is exposed on such a plate the rays from the strongest lights will, of course, quickly penetrate the upper film, but when the slow emulsion is reached they will proceed with less speed, and very seldom will the rays of light penetrate through to the glass. As the object of this plate is to do away with halation, it is termed a NON-HALATION plate.

169. The Lumière Non-Halation Plate has instead of the slow emulsion next to the glass, a coating composed of a brown pigment, which, of course, holds back all rays of light, not allowing them to reach the glass. Upon this brown coating is the regular emulsion. The plate is developed and fixed in the usual manner. The brown dye is removed in the fixing bath.

170. Non-halation plates are a great boon to the busy worker who has neither time nor inclination for backing his own plates. For those who desire to back their own plates, there are several methods at hand for expeditiously accomplishing the operation in a very satisfactory manner.

171. **Methods of Backing.**—A printing frame is probably the best piece of apparatus that can be used to assist in backing, but when a frame has been once used for this purpose it should be kept apart, and not employed for any other purpose.

172. **Backing Mixtures.**—Caramel dissolved in alcohol

or water forms the ideal backing mixture. It is for this reason that the following method of backing plates is recommended, as the mixture not only takes some little time to dry, but also is very sticky.

173. The following formula is a representative one for caramel backing, and can be recommended:

Gum solution (ordinary mucilage).....1 oz.
Caramel .....1 oz.
Burnt sienna, ground in water.....2 ozs.
Mix and add
Alcohol .....2 ozs.

174. The plate should be placed in the frame, glass side out, and a piece of smooth chemically pure, perfectly dry, fluffless blotting-paper placed on the film side, to protect it from injury when the back is put in place. The backing mixture is applied with a stubby, soft, hog-hair brush, and smeared lightly all over the glass surface. Pieces of tissue paper cut slightly smaller than the size of the plate should be prepared beforehand. As soon as the backing is applied, a piece of the tissue should be pressed into contact with the glass, and gently rubbed down. The plate should now be removed from the printing frame with the tissue paper adhering. It will be found that the edges of the plate are perfectly clean and free from backing. Further smoothing down of the paper will result in no particle of backing remaining in view to stick to anything. The plates can then be put into the plate holders, without danger of the backing coming off when dry, unless its removal is desired. *All operations of backing must be carried on in the dark room, and as far from the ruby lamp as possible.*

175. Another good method of backing plates is as follows: The backing is composed of burnt sienna mixed with water, and sufficient dextrine added to make the solution of a thick, creamy consistence. Upon a sheet of glass some of the color is distributed, then a roller is passed over the mixture and applied once or twice to the back of the dry plate, which will result in a perfectly even coating. If your desire is to dry the mixture very quickly, methylated spirit

(alcohol) can be substituted for most of the water. A soft roller squeegee will answer if the composition roller cannot be obtained.

176. **Backing Sheets.**—A very handy method of backing plates quickly and economically is to use backing sheets. These are composed of stout material, such as tough brown paper, coated with a film of backing mixture. These sheets can be squeegeed or pressed into contact with the back of plates, removed before development, and used again until worn out. Backing sheets can be prepared as follows: Dissolve a quarter of an ounce of glycerine and half an ounce of gelatine in two ounces of hot water. Add enough India ink to make a deep black. Coat tough brown paper with this mixture, and squeegee on to glass to set. Cut this prepared paper to required size, and when wanted it can be rubbed with the palm of the hand into contact with the back of the plate. Remove before development.

177. Another efficient backing is provided by procuring a piece of black carbon tissue. Cut out a piece slightly smaller than the size of the plate to be used; moisten the tissue with water. Allow it to become as nearly dry as is consistent with its remaining limp, then again moisten the black surface, but this time with glycerine. As carefully as possible press the tissue against the back of the plate. It will adhere, and may be removed just before development.

178. Glycerine can be spread evenly on black paper (which comes in the box of plates), cut to the same size as the plate employed. These sheets can be pressed into contact with the back of the sensitive plate, care being taken to remove all air-bells. Remove this backing and rinse off all glycerine from the plate before developing. Be very careful *not* to get any glycerine on the film side of the plate.

179. **Color Corrected Plates.**—Not until a thorough knowledge of the manipulation of ordinary plates has been obtained should the beginner, or even any photographic worker, attempt the use of plates which have been corrected for various color values. When thoroughly accustomed to the ordinary plate, of good rapidity, then the special plates,

which will produce the proper color tones and tints, may be used. It is an added power and enables some work to be done which could not be made without it. Color corrected plates are otherwise known as ORTHOCHROMATIC and ISOCHROMATIC PLATES.

180. **Advantages of Color Corrected Plates.**—There is considerable advantage in employing color corrected plates in landscape photography. The ordinary plate, being much more sensitive to blue and violet than to green, yellow and orange rays, fails entirely to translate the colors of nature with accuracy into monochrome (one color). This failure would be more noticeable were it not for the fact that in addition to the colored light reflected from an object there is a proportion of white light. The defect is noticeable, however, even to an untrained eye, for it is a very common thing to see in the average landscape picture the unnatural darkness of grass, trees, etc.

181. Although it is not claimed that the orthochromatic plate with a ray filter gives a perfect rendering, there can be little doubt as to the improvement effected when the ray filter is employed with plates that are sensitive to yellow and green. The tone of grass and foliage is better, while the holding down of the blue by the ray filter enables white clouds and blue skies to be reproduced with very nearly their proper color value, and prevents the bluish haze of the distance from being exaggerated through over-exposure.

182. **Ray Filter.**– In photographing landscapes, the sky will be greatly over-exposed by the time a sufficient amount of detail has been secured in the foreground, as the plate is extremely sensitive to the blue rays of light. In order that a perfect register on the plate be made, and that the relative values exist between the sky and the foreground, some means must be employed to retard the action of the blue rays of light. This is accomplished by placing in front of the lens a yellow screen, or filter, which will absorb a certain percentage of the blue rays. The rays absorbed, or retarded from acting on the plate, depend entirely upon the density of the yellow filter. An extremely light colored

filter may increase the exposure four times and such a filter is, therefore, called a four-times screen. A darker one may increase the exposure eight times, hence it is called an eight-times screen. Where the plate is corrected chiefly for yellow (as in the case with ordinary brands of orthochromatic and isochromatic plates) and where the view contains practically little blue—the predominating colors being green and yellow green—it will not be necessary to employ a ray filter. As a rule, however, the full value of color corrected plates is not realized until a ray filter is used in conjunction with them. It is not correct to state, as is sometimes done, that color corrected plates are of no advantage whatever unless a screen is employed, for there is always some advantage in using orthochromatic plates and often a very material improvement is obtained by using these plates, even without a screen.

183. In landscape work there is a tendency almost to "over-correction" if the yellow light filter is employed, unless the photographer is very expert in gauging the exposure.

184. For the average required ray filter a fixed-out and washed lantern plate, dyed in a solution of yellow color to a depth sufficient to increase the exposure from five to ten times, will give a screen suitable for most landscape work. (See Paragraphs 193, 194 and 195.)

185. THE BICHROMATE OF POTASH RAY FILTER is simple in construction, consisting of a neat metal ring, in which is mounted a brass cell, the top and bottom of which are made of two thin pieces of a high grade optical glass, with surfaces perfectly plane and parallel. The cell holds a solution of bichromate of potash. This construction is specially adapted to the three color process, inasmuch as the cells may be filled with fluids of any desired color, and the shades may be easily varied by strengthening or diluting the solutions, which do not degenerate.

186. This ray filter fits like a cap on the front of the lens, the most convenient position for attachment or removal, and is manufactured in four styles.

187. Style "A," shown in Illustration No. 27, is cork lined and fits over the hood of the lens. When ordering, send strip of paper just reaching around the hood.

188. Style "B," Illustration No. 27, has three binding screws and can be fitted to lenses varying in size from the diameter at which the cell is listed to one-half inch smaller.

189. Style "I P," Illustration No. 27, is similar to Style "A," but with the mounting reduced to fit regular hand cameras 4 x 5 and 5 x 7.

190. Style "I F F," Illustration No. 27, is intended for box cameras with fixed focus lenses, and is attachable by extra large flanges fastened to the front of the camera.

191. In Illustration No. 28 we show the complete cell outfit, as manufactured by the Bausch & Lomb Optical Company.

192. This attachment, by absorbing certain rays from the light which would otherwise reach the lens, equalizes the effects which the various component colors in white light have upon the sensitive photographic plate. Therefore, practically speaking, the true color values of all objects are accurately reproduced in the monochrome picture. As is the case with all correctly made ray filters, over-exposure of the sky is prevented and detail in the clouds reproduced. Most of the rays of light which cause halation are absorbed, and thus halation is practically impossible. Distant objects appear distinctly in the image, even when photographed through miles of atmosphere.

193. **Home-made Ray Filters.**—If you desire to make your own orthochromatic screen, you will find the following experiment very interesting, as well as instructive. In gaslight take an ordinary lantern plate and fix it, in a solution of 4 ounces of hypo to one pint of water, for 10 minutes; then wash it for one hour and allow it to dry in a room free from dust. The plate must be dried in a vertical position or in a drying rack. This gives you a piece of glass which is colorless, and as it contains a transparent coating of gelatine you can stain it to any desired color by soaking it for the necessary time in a dye solution. The following solu-

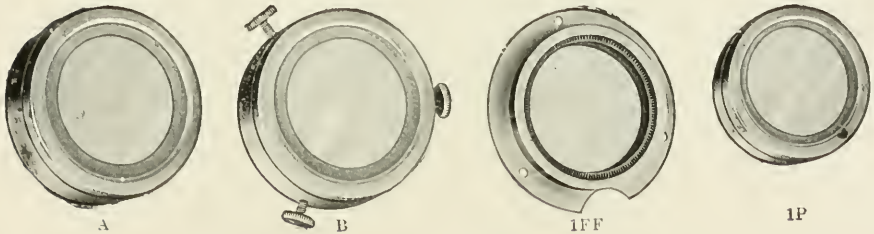


Illustration No. 27—See Paragraphs No. 186-190

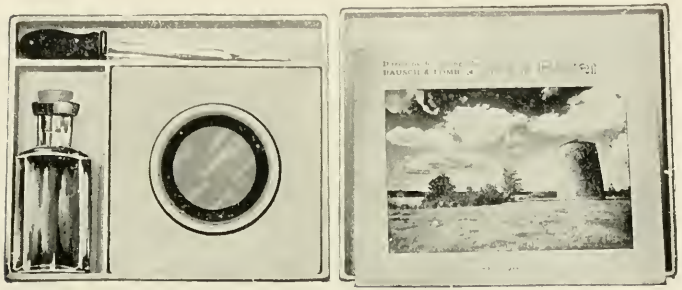

Illustration No. 28—See Paragraph No. 191
"B. & L." Bichromate of Potash Ray Filters

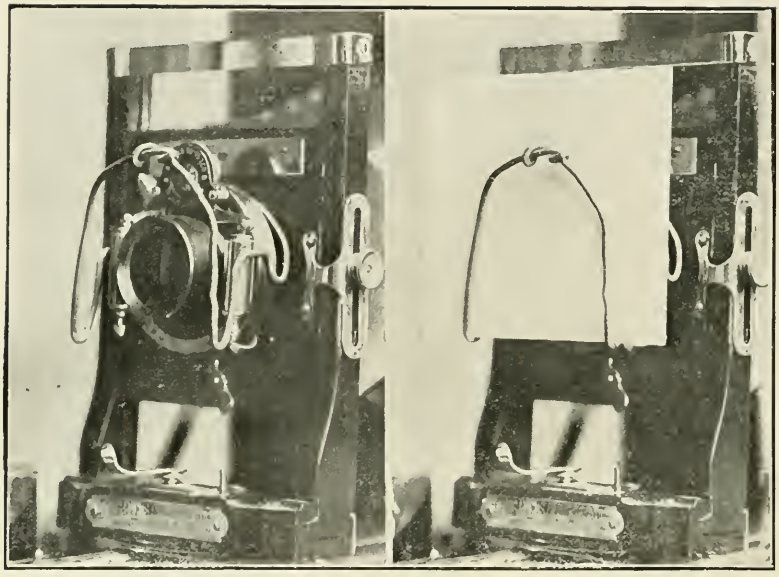

Illustration No. 29
Attaching Home-Made Screen on Lens
See Paragraph No. 195

tion we recommend: Napthol (yellow), 5 grains dissolved in 4 ounces of distilled water. The dye must be completely dissolved before the solution is used, and if you have a funnel and filter paper, filter it in the ordinary manner.

194. After the solution has been carefully filtered and all sediment removed, take a clean dish and lay in it the fixed-out lantern plate; then, with an even "sweep," pour over it the yellow solution, being very careful to avoid any air bubbles. In about ten minutes time the gelatine film will have become colored to a pale lemon yellow. You can now rinse it under the tap and set it up in a perpendicular position to dry. It is advisable to stain two or three glasses in this manner to varying depths of yellow. The longer the glass remains in the solution the deeper the color.

195. **How to Attach Home-made Screen.**—A piece of wire long enough to form a loop over the lens barrel should be secured and be bent in the manner shown in Illustration No. 29.

196. **Disadvantages of Color Corrected Materials.**—In landscape work the use of orthochromatic plates causes increased length of exposure. The color sensitive plate used without a filter is, in some instances, very little better than an ordinary plate. It, however, is of value (even used without a filter) when the light is yellow, or when there is an almost complete absence of blue in the subject and a predominating amount of yellow. With many subjects the greater length of exposure is impossible, and in most cases it is a disadvantage. Of course an exposure of a couple of seconds is not a long one for a landscape; but, you will find it much more advisable, in many cases, to use the ordinary plate and secure a quick exposure, rather than run the risk of a total loss of the subject through "blurring" caused by movement of trees, etc.

197. The increase of exposure is also a serious matter for the photographer using a hand camera, and in many cases it is almost an impossibility to use a ray filter of any depth when the camera is held in the hand, even under the most favorable conditions. For serious landscape work it is

necessary, however, to employ a tripod, and this difficulty, therefore, will be overcome.

198. As color corrected plates are sensitive to orange, yellow and similar shades, there is considerable danger of fogging the plates during the process of loading the plate holders and development. Until you have learned how sensitive an ordinary quick plate really is, and have become accustomed to the precautions necessary in handling them, it is much better to leave the orthochromatic plate alone.

199. **Choice of Subject and Filter.**—If pleasing results in landscape work are desired, a good deal of discrimination must be exercised in the selection of the ray filter. You should also be careful in choosing a subject upon which to use the combination of ray filter and color sensitive plate, as it is not worth the while to employ them in some cases; for, as previously stated, the difference in the resulting negatives will be practically unnoticeable. It is hardly necessary to say that orthochromatic plates will in all cases answer where an ordinary plate is used—without a screen—but it is in landscape work, flower photography, as well as picture copying and interior work, that the benefit is gained by the use of color corrected materials.

200. It is quite clear that a good filter will require a fixed time with the plate for which it is made, and it is necessary for you to experiment, to a certain extent, with the color corrected materials before you will be able to secure accurate exposure. Where short exposures are desired, and especially when using the hand camera, for cloud photography and for views containing moving objects, the lightest tinted filter only can be used; while the deeper ones will produce the best results for general landscape work, flower photography, and copying colored pictures. But in using the deeper colors it is necessary to employ a firm support, preferably a tripod, otherwise, owing to the length of exposure, a blurred image will result.

## CHAPTER VI.

# LANDSCAPE AND GENERAL VIEW PHOTOGRAPHY.

### Composition.

201. **Securing Pictorial Effects.**—The photographer is greatly handicapped, as compared with the painter, inasmuch as he has very limited power to omit from, or add to, the subject at which his camera is directed. Taking this into consideration it is advisable to spend considerable time in studying and selecting the *point of view* from which it is desired to make the exposure. If this is not done there is a liability of some object being misplaced, or some obtrusive object included, to the detriment of the final result. *Your individual power of selection will overcome any difficulty.* By cultivating your power of observation you will learn to advance your camera until an unsightly object passes out of the field of view, or to bodily remove the objectionable feature, if possible.

202. **Selection of View.**—Before even setting up your camera, and previous to considering the making of an exposure, you must decide upon one point in particular:

"*Is the view worth recording?*"

Perhaps this will seem obvious to you, but it is one of the chief stumbling blocks to the amateur. It is often very difficult for him to decide what is worth recording and what is not. Many persons when first taking up photography go forth with their cameras and throw common sense to the winds, wasting plate after plate upon the most useless and uninteresting subjects—views which have no beauty and no purpose.

203. **Choice of Subjects.**—In landscape photography

the selection of the subject and the choosing of the point of view (position of the camera) are the two most important things to take into consideration at the start. Do not attempt to look at nature too broadly and generously, as it is far better to seek for impressions. Do not allow the charm of strong color and detail to confuse you and thus lose the proper effect of composition.

204. **Excessive Contrasts.**—It is necessary to avoid excessive contrasts in a general way. These types of subject may look very striking in nature, but the lens and plate are apt to give a very crude and mechanical rendering of them. Soft half-tones and delicate gradations are infinitely easier to secure and reproduce, and in the finished picture are quite as attractive to the cultured observer.

205. **Kinds of Subjects.**—There are, practically speaking, two varieties of subjects which allow of being interpreted to the best advantage by means of photography: *First*, those interesting or beautiful when recorded just as they are found; *second*, those whose interest and beauty depend upon the treatment they receive and the character and individuality with which they are stamped.

206. *Remember*, that *art cannot be hurried.* But don't lose an opportunity of securing a pictorial effect by taking up unnecessary time.

207. On going out on your pictorial excursions you will find it very much to your advantage to go alone, as it is almost impossible to get your mind settled upon your work if you have with you a talkative and disconcerting friend.

208. **Elementary Art Principles.**—Before entering into the actual work of taking pictures, it is advisable to dwell for a short time upon some of the principles and elementary rules in art. Some photographers contend that there are no rules in art; yet there are certain conventions, at least, into which pictures fall.

209. **Limitations.**—The photographer is denied the use of color, and is also bound, to a certain extent, by the limitations of his instrument, and must, therefore, rely upon line,

form and the great range of gradations between white and black. *The misleading effect of color* can always be obviated by employing a piece of blue glass, and with this valuable adjunct you will be able to secure the true groupings of light and shade; for by looking through this blue glass you will realize the monochrome (one color) possibility of the view. The blue of the glass removes practically all strong and catchy colors, and gives you simply the black and white rendering of the scene. Its intelligent use shows that a scene which is otherwise satisfactory will be often disappointing when reproduced into black and white.

210. **Composition.**—In judging the merits of a picture there are a great many points to be taken into consideration, but of all these various points the composition of the view (i. e., the arrangement of mass and detail and shade, and the important and unimportant) is the all-important one. A scene may present excellent composition, yet make a poor picture. If you learn the elementary principles of composition you will, to a certain extent at least, have taken a decided step on the road to successful picture making. Bear in mind, however, that the art of composition is, to a very marked degree, a sense, and it is necessary to appreciate and to be able to see with an artistic eye the predominating objects and the general view upon the ground-glass at a glance.

211. There is a similarity between the feeling of a person who appreciates music and the one who can understand correct arrangement in composition. Often a non-educated ear will prefer poor music to good music. The same principle holds good with the eye untrained in pictorial composition, as it may even prefer the bad to the good. It is possible to develop the pictorial sense, however, in a manner similar to the education of the musical taste, providing you are willing to learn and will not insist upon certain preferences which you have no good grounds to hold.

212. **The Best Way to Compose a Picture.**—After having a reason for photographing a subject, you must recognize that there is a best way to make the record. You must

find that way by selecting the most appropriate point of view from which to make the exposure, as well as to arrange the various items and masses upon the ground-glass, so they will be well balanced and properly composed.

213. **The Principal Object of Interest.**—Another vital point in composition is: *There must be a principal object of interest in the picture, and that object must be put in the right place, not only with regard to the spacing of the negative, but also in relationship to the other details of the picture.* For this

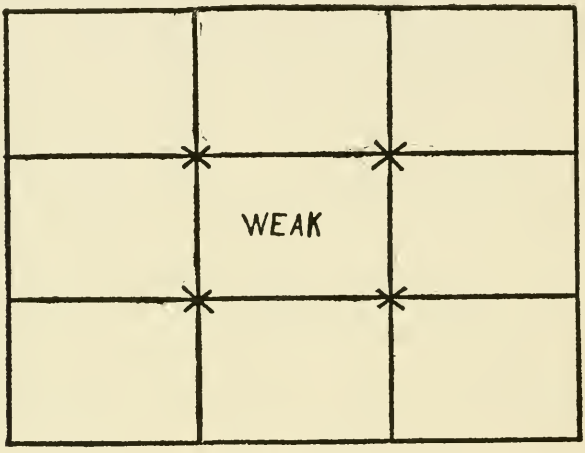


Illustration No. 30

purpose you will find it an excellent plan to rule your ground-glass in the manner indicated on the accompanying diagram (see Illustration No. 30.) The crosses indicate the positions of strength; the weakest part of the space is the center. The principal object of the picture, therefore, should be placed very close to where the lines intersect; that is to say, *near*, but not in, the middle of the picture. Of the two sides the *left is stronger than the right.* Therefore, a picture having its most important masses on the left side is, as a rule, more satisfactory than when the reverse is the case. You can see this very readily by selecting a negative which is "one sided" and comparing the effects produced

by viewing it; first, holding the film side toward you, then turning it around and viewing from the glass side.

214. **Subordination.**—Having secured a principal object in the picture space and placed it in proper position, it is necessary to next consider the placing of the remaining subjects or points of interest. In other words, it is necessary to so handle the various items in the picture space *that the principal object will stand out in greatest prominence, all other portions being subordinate—the eye must not be distracted by counter attractions in other parts of the picture.* You will, no doubt, find this principle the most difficult one to carry out, for it not only involves a knowledge of composition and an ability to employ this knowledge in your actual work, but also the exercise of proper treatment in the developing and printing of the photograph, whereby certain details can be suppressed and others strengthened.

215. **Harmony.**—Each picture must present a harmonious whole, and there must be no intrusion of details that stand out in the picture to destroy the original idea. This principle is very easily violated by introducing unsuitable figures into the landscape. If figures are introduced into the scene their dress and general appearance must conform to the idea that you intend to convey in the view. If the preceding principles have been carefully carried out, this Law of Harmony will, practically speaking, have been taken care of.

216. **Balance.**—The final, and perhaps the most vital, point for consideration is the Law of Balance, or the filling up of the picture space. Above all things the unity of the picture is of the greatest importance, and it is very necessary to secure this unity, or balance, on the ground-glass of the camera, and thus have it in the resulting negative. It is possible, however, if the correct balance is not secured in the negative, to trim the resulting print (see Trimming and Mounting, Volume I), which will help wonderfully. If, however, the correct distribution of the masses can be obtained without trimming, the general effect will be much better.

217. **Pulling Power of Picture Space.**—Each and every part of the picture has a certain amount of pulling power; that is, each and every section claims attention, and might be termed a magnet—each one having a certain amount of attraction for the eye, and in obtaining attention for itself weakening to a greater or less extent some other point of attraction in the picture.

218. **The Steelyard.**—In his excellent book on "Pictorial Composition," Mr. Henry R. Poore makes liberal use of the steelyard principle of balance, which he clearly explains in the following manner:

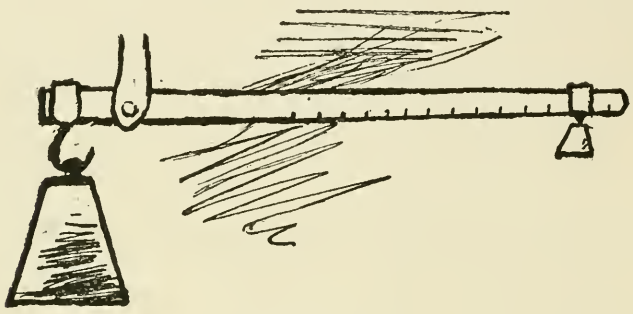

Illustration No. 31

219. "On the principle of *the steelyard* (see Illustration 31), the farther from the center and more isolated an object is, the greater its weight or attraction. Therefore, in the balance of a picture it will be found that a very important object placed but a short distance from the center may be balanced by a very small object on the other side of the center *and further removed from it.* The whole of the pictorial interest may be on one side of a picture and the other side be practically useless as far as picturesqueness or story-telling opportunity is concerned, but which finds its reason for existing in the *balance*, and that alone.

220. "In the emptiness of the opposing half such a picture, when completely in balance, will have some bit of detail or accent which the eye in its circular symmetrical

AUGUST SHOWERS

Study No. 10—See Page 311

By Dr. A. R. Benedict

"FAST FALLS THE EVENTIDE"

By Geo. H. Paine

Study No. 11—See Page 312

inspection will catch, unconsciously, and weave into its calculation of balance; or if not an object or accent or line of attraction, then some technical quality, or spiritual quality, such, for example, as a strong feeling of gloom, or depth for penetration, light or dark, a place in fact, for the eye to dwell upon as an important part in connection with the subject proper, and recognized as such.

221. "'But,' the querist demands, 'if all the subject is on one side of the center and the other side depends for its existence on a balancing space or accent only, why not cut it off?' Do so. Then you will have the entire subject in one-half the space to be sure, but its harmony or balance will depend on the equipoise when pivoted on the new center."

222. "It is not maintained that every good picture can show this *complete* balance; but the claim is made that the striving on the part of its designer has been in the direction of this balance, and that, had it been secured, the picture would have been that much better."

223. "It is easy to recognize a good composition; to tell why it is good may be difficult; to tell how it could be made better is what the art worker desires to know. Let the student when in doubt weigh out his picture in the balances mindful that the principle of the steelyard covers the items in the depth as well as across the breadth of the picture."

224. Another rule which you should bear in mind is: "Where the subject is on one side of the center it must exist close to the center, or, in that degree in which it departs from the center show positive anchorage to the other side." Frequently, where the subject matter appears to one side of the center and the opposite side contains practically nothing of importance, there should be in this space some detail or unit of attraction which the eye will catch when viewing the picture as a whole.

225. Referring to Study No. 13, "Calling the Ferryman," by Nancy F. Cones, we have the strongest items, or masses of interest located very near the center, these being the two children. If the larger child did not appear in the

picture the smaller one would occupy the undesirable central position, but as the picture now stands these two subjects could not have been better placed. Notice that they occupy a position in the left-hand side of the picture. The small item of interest or weight on the opposite side is the ferryman in his boat. Observe further, that this item, although very small, balances the two items in the foreground, carrying out two principles of balance; the first

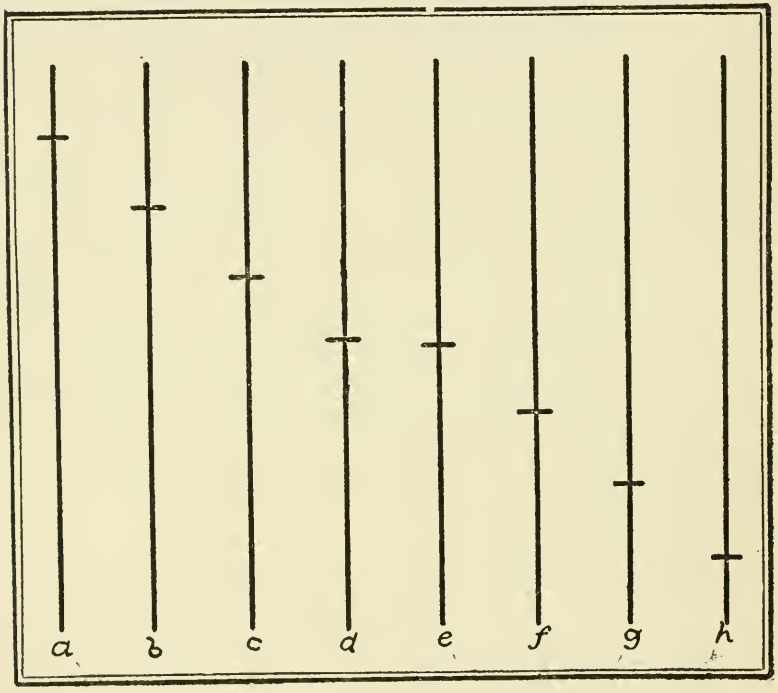


Illustration No. 32

being, that an object located near the margin of a picture has a greater weight than one near the center; and second, an item or object in the distance has greater weight than one in the foreground. This picture is an excellent example of the steelyard principle of balance. (See page 130.)

The simplest of pictures may have practically no detail

on the side opposite the principle item of interest, the artist having left a stretch of space which in itself balances the mass on the opposite side. The technical quality on this practically blank side of the picture may be expressed in various ways. For example, it may express a strong feeling of gloom, depth of penetration, light or dark, something at least upon which the eye can rest, if only for a moment.

226. **Artistic Bisection of a Line.**—In order that you may understand more clearly why a subject should be located either to right or left of the center, or above or below the center of a picture, we will go into detail regarding the dividing of a straight line in the proportions which will give the most pleasing effect.

227. In Figure 32 is illustrated a series of straight lines divided by short cross lines. Look at these lines carefully and you will probably feel that the lines A, B and C are divided in a more pleasing manner than F, G and H. In other words, if a straight vertical line is to be divided into two unequal parts, you prefer to have the division come above the middle. This is not an altogether unimportant fact.

228. In judging vertical distances, we almost always over-estimate the upper half. For this reason the line E, which is divided into two equal parts, appears to be divided into two slightly unequal parts, and the lower section seems to be the smaller. The line D is divided at a point slightly above the middle, but it appears to be divided into two exactly equal parts. Many persons would say that the line D is more pleasing than E, for D appears to be divided into two equal parts, while E appears as if an unsuccessful attempt had been made to divide the line into two equal parts.

229. Line D appears to be perfectly symmetrical—its two parts appear equal. The symmetry about this division pleases us, and most persons would say that this line, which is divided symmetrically, is more pleasing than A or H, which are not divided symmetrically.

230. The two parts of the lines A, B, G and H appear too unequal, and the two parts of line E appear too nearly

equal. Lines C and F are very pleasing. They have divisions which do not seem to be too much alike, so the divisions give diversity. The parts are not so different that they destroy the feeling of unity in the line. A line is pleasing if its two parts are not too much alike and not too different. The ratio of the smaller section of the line to the larger section in C and F is approximately that of 3 to 5. That is to say, if a vertical line is eight inches long, the result is pleasing if the line is divided into two sections which are respectively 3 and 5 inches long.

231. Exact experimentation and measurements of artistic productions show that there is a reasonable preference for this ratio, which is known as the "*golden section.*" The exact ratio is that of 1 to 1.618, which is approximately that of 3 to 5. A line is divided most artistically if the lower section is 1.618 times as great as the upper. Although the fraction seems very formidable, it is the arithmetical expression of a simple proportion, which is this: The short section is to the longer section as the longer section is to the sum of both sections. Any division of a line which approximates this "golden section" is pleasing, but a division which approximates the symmetrical division (and is not quite symmetrical) is displeasing. This explains why the principal object of importance in a picture should not be placed in the center of the picture space.

232. If you hold Figure 32 sideways, the lines will be changed from vertical to horizontal. The divisions will now assume a new relation. The divisions of lines A, B and C cease to be more pleasing than those of F, G and H. This shows why the main subject of a picture looks more pleasing on the left side. E now seems to be divided symmetrically and is more pleasing than D. In fact, for most persons the symmetrical divisions of E seem to be more pleasing than those of even C and F, which are divided according to the ratio of the "golden section." The most pleasing division of a horizontal line is that of perfect symmetry, and the next most pleasing is that of the "golden section."

233. In these divisions of straight lines into two equal

Illustration No. 33
Masses of Equal Size
See Paragraph No. 237

Illustration No. 34
Masses of Unequal Size
See Paragraph No. 237

parts, unity is secured; in the divisions according to the ratio of the "golden section" diversity is secured, but the unity is not entirely lost. *Unity and diversity are essential elements in all esthetic pleasures.* In vertical lines we seem to prefer the emphasis on the diversity, while in horizontal lines the exact symmetry, or unity, is most pleasing.

234. In arranging your picture properly on the ground-glass, as well as in selecting the point of view, it is essential that you always bear in mind the principle of the *steelyard.* It is quite true that there are excellent pictures that do not possess this principle, but there are, in such pictures, other qualifications which take the place of the steelyard principle.

235. **Value of Location of Units Within the Picture Space.**—You must bear in mind that every picture is composed of a collection of units or items, and that every unit has a given value and the value of that unit depends upon its attraction (its attraction varying as to its placement—whether near or far from the center of the picture). A unit near the edge is more attractive and has more weight than one at the center. *This is important.*

236. As just explained, every part of the picture space has some attraction. If a unit is placed in a dark blank space its weight of attraction will be greater than if it is placed among other units; and, in like manner, a black unit on white or a white on black has much more attraction than the same unit on a gray tint. The value of all units depends upon the size of the unit, as well as upon the size of space contrasting with the unit. A unit in the distance has much greater weight than a unit in the foreground. (See Study No. 13, "Calling the Ferryman," by Mrs. Nancy Cones.) Where a number of units are situated closely together they may be considered as one unit, the center of attraction being the point on which they balance other units in the picture. (See Page 130.)

237. **Masses of Light and Shade.**—A section of a picture having one tone, and being sufficiently set apart from other portions as to attract a certain amount of attention,

either great or little, is termed a mass. Masses of equal size, occupying similar picture space equal one another, and therefore, care must be exercised to avoid placing them as shown in Illustration No. 33. A principal mass only acquires its importance by contrast with a smaller one. See Illustration No. 34, which shows the same subject with enough weight added to the left to properly balance the picture space.

238. **Forms of Composition.**—There are three general

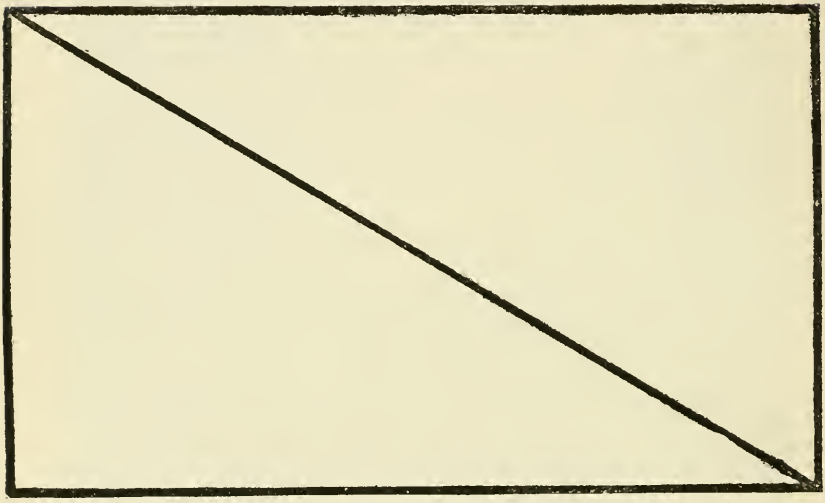

Illustration No. 35

forms of composition that the beginner should consider. The first and most important one is known as the triangular form; the second is the emblem of grace and movement, and is known as the "line of curvature;" and all composition arranged under this particular form has an arrangement of lines or masses according to what is known as "Hogarth's Line of Beauty." The third form is the circular or oval form of arrangement.

239. **Triangular Form.**—To illustrate the first arrangement (the triangular), we divide the picture space by a diagonal, as shown in Illustration No. 35. To obtain proper

balance the main object of importance should be placed in the lower division near the center of the picture, while in the lower corner of the upper triangle should be placed an object of secondary importance. The upper portion of the upper triangle may be occupied simply by the sky.

This principle is strongly exemplified in Study No. 8, "Day is Far Spent," by C. F. Clark. If a diagonal is drawn from the upper right-hand corner to the lower left-hand corner it will be observed that the lower triangle is practically filled with the subject of the picture. The lower part of the upper triangle contains a few trees, but the great majority of it is occupied by the sky. A picture of this kind is pleasing, and you should aim in every way possible to have your landscape pictures especially balanced in this manner, for

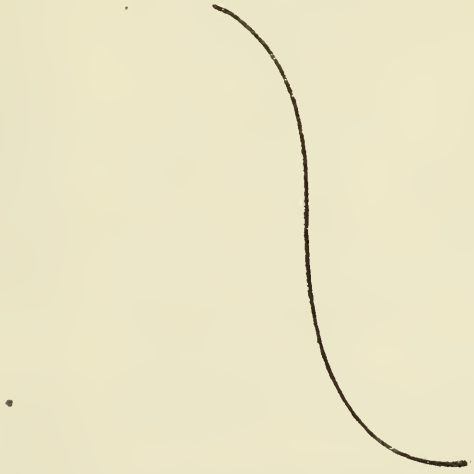

Illustration No. 36

if you will hold to this one principle until you have thoroughly mastered it you will have made an important step toward successful picture making. (See Page 71.)

240. The perfect triangular form of composition is rarely seen, for in most cases where the lines of the triangle are detected at first sight, other lines or points of interest

appear with such strength as to destroy or modify, at least, the main construction of the triangular form.

241. **Line of Curvature.**—One of the easiest forms of composition for the beginner to handle is the one based upon the letter S, or upon the more angular form of the letter Z. Among artists this line is known as "Hogarth's Line of Beauty." It is shown in Illustration No. 36. A common example of this line is to be found in Nature by the form of a woman's back; if two were joined back to back they would produce the beautiful curve of a mouth. Horizontally the line becomes a very serviceable one in landscape. (See Illustration No. 37.)

242. **Circular Form of Composition.**—The circular or oval forms of composition lend themselves very naturally to groups of shrubbery and all still life subjects. Curved lines of all descriptions are to be found everywhere in Nature, from the branches of the elm to the winding banks of a stream. (See Illustration No. 38.)

243. **Atmosphere.**—The amount of distance or relief that is expressed in a picture is termed "atmosphere." In photography we are reproducing round subjects, as well as objects situated at varying distances from the camera, and placing them on a flat surface. In order to hold true to Nature in our reproduction it is necessary to secure as much roundness or relief, or, properly speaking, "atmosphere" in the picture as possible. (See Study No. 9, "Bridge," by J. H. Field. Page 91.)

244. You must first have a perfect understanding of the balance of a picture before you will be able to proceed further, and if, by this time, you are not thoroughly familiar with the principles of the *steelyard*, go back and read again, very carefully, Paragraphs 218 to 225.

245. **Horizon Line.**—*In summing up what we have now covered, regarding balance and composition,* four important principles present themselves. The first one deals with the relative amount of sky and landscape to be included in the field of view. Therefore, the FIRST rule is: *Never allow the horizon to bisect the picture.* If the horizon cuts the picture

Illustration No. 37—See Paragraph No. 241

Illustration No. 38—See Paragraph No. 242

into two halves the eye at once resents the error of assigning equal areas to those two primary factors.

246. SECOND: *The highest point in the landscape should never coincide with the center of the picture's width, but should fall either to one side or the other.*

247. THIRD: *Such subject or subjects as we may wish to include in the foreground, whether they be figures or inanimate objects, must neither occupy the center, nor approach too closely to either side, nor to the lower limit of the picture.*

248. FOURTH: *Should the object or objects be of conspicuous size, they should find a background in the more distant landscape masses, rather than in the sky.*

249. In order that we may impress upon and give you a clearer idea of these rules, let us take as an example a country road, with a farmer's wagon and team. Should we place the camera in the center of the road the wagon would be brought into the forbidden central position, while the road itself would divide the picture into two equal proportions. A very undesirable symmetry would thus be created in the main divisions of the picture. To obtain the proper result you should place the camera to one side of the road, and upon so doing you will be able to appreciate at once the value of the diagonal course the road takes, and a little careful maneuvering will bring the wagon into the desired position.

250. Hence, it is very evident that actual picture-making by photography demands that you should act deliberately. There must be no hasty "snap-shotting," but a studied system of trial and rejection should be employed.

251. **Test Card.**—In order to save a certain amount of time, you will find it most convenient to take a piece of cardboard and cut in it an opening the size of the plate you are using, and if possible insert in this opening a piece of blue glass (the effect of this blue glass has been previously explained; it reduces the color scheme of the scene to a monochrome value). By employing this card, even though you do not have the blue colored glass, you will be able to see and readily recognize the proper placement of the various

masses to secure the correct effect of composition. The masses will, however, not present their true weight unless you remove their color value, for some of the tints will reproduce in the negative with an entirely different value from what you thought they possessed when you observed them in their natural color state.

252. Up to this point we have tried to impress upon you the importance of careful selection, with the aim of securing a well-composed picture; and, then, to have you satisfy yourself that the relative tones are such as will insure vigor, contrast and the subordination of the more unimportant parts.

253. **Breadths.**—By the term "breadths" is meant the subduing of what may be called "spottiness," or the scattering of lights and darks. A fine mass of dark trees for instance, unpierced by distracting points of light, will give greater pictorial value than a similar mass of trees finely interspersed with light patches of sky. The reverse of this is also true—a group of figures in light costume should be arranged and massed so that their combined effect is as of one large surface, instead of a scattered series of light spots.

## CHAPTER VII.

## INSTRUCTION IN LANDSCAPE PHOTOGRAPHY.

254. **Suggestions for Choice of Subject.**—Never allow strong colors and complicated views to carry you away from the principles which will produce the most artistic results. You will find that occasionally a large view, or a view composed of many units, will make a pleasing picture, but if it does it is due to the fact that it composes well and has its proportions subordinated according to the previous rules we have given. The beginner, and even the advanced worker, should choose only simple landscape pictures. A tree, a picturesque old building, a stone fence or wall partly broken down, a portion of a river whose banks are lined with willows, or an old bridge over a brook, will form excellent subject material. These are simple subjects and they will prove excellent ones for any student desiring to advance and understand the important principles underlying satisfactory results.

255. **Genre Work—Pictures that Tell a Story.**—It is a generally conceded fact that a picture telling a story belongs to the type or class of work known as Genre. Every picture should tell a story; if it does not, it fails to accomplish its purpose. A story set forth depends entirely upon the selection of the subject, and the simpler the subject the more direct and convincing will be the idea conveyed. A strong example of photographs of the Genre type is shown in Study No. 13, "Calling the Ferryman;" Study No. 14, "Fairy Tales;" Study No. 15, "The Edge of the Cliff," and Study No. 19, "Street Scene—Winter." In each of these the human figure plays an important part. It was really essential that

these figures be in the picture in order that the idea which the artist intended to convey be carried out.

256. **Individuality in Picture Making.**—Select the subjects which please *you.* Artistic work is individual, and you should, from the very start, attempt individual expression in your work. In landscape photography you have a broad field, and the quiet scenes which are prevalent everywhere form excellent subject material. A quiet country road winding out of sight in the distance, a sunset with clouds slowly darkening into night, or a river with its sheen of silver lost under the trees, are very expressive, and subjects of this class offer endless opportunities to the student possessing any artistic feeling.

257. There is still another class of work along this line, which includes life, motion and vigor, and many will be attracted to this particular phase of work more than to the quiet studies. Our advice is, however, to select those subjects which interest *you* especially, and then work to make them an expression of your individuality through your art work.

258. After you have satisfied yourself, by the use of your card frame and blue glass (See Paragraph 251), of the pictorial value of the scene you wish to reproduce, turn to the inverted image on your ground-glass screen and make another examination of the view.

259. **Focusing.**—Focusing is a very important factor, and you must remember that sharpness of focus is only permissible for objects in the foreground; the distance will take care of itself. Any lack of definition in the distance would add to, rather than detract from, the pictorial effect. Therefore, a small stop in the lens is fatal to success in landscape work. Whatever stopping down is done in landscape photography must be only sufficient to carry clearness of definition so far into the picture as will suffice to correctly define the nearer details. *Many good pictures may be taken with an unstopped lens.*

260. You will now readily understand that the best re-

"PLEASURES UNDER SUMMER SKIES"

STUDY NO. 12—See Page 309 BY WM. T. KNOX

CALLING THE FERRYMAN

Study No. 13—See Page 308

By Mrs. Nancy F. Cones

sults will come to the *careful, methodical* and *deliberate workman.*

261. **Exposure in Landscape Photography.**—In ascertaining correct exposure for landscape work the size of stop is of great importance, for the use of the small stop prolongs the exposure and thus causes a great risk of movement and entirely ruins landscape subjects by completely destroying the atmosphere of the distance. For all practical purposes stop F. 8 will be the most suitable. Should your lens work at F. 6.8 so much the better. Remember that you do not want to secure sharp detail, especially in early morning studies. A broad and soft effect is what you should strive to obtain. The actual duration of the exposure, of course, depends to a great extent upon the character of your subject. An open landscape, upon which falls strong sunlight, will require not more than 1-25 of a second, while an exposure in the woods, particularly when there is a little mist present, will require fully ½ second in the early morning.

262. **Development.**—When developing dilute the solution liberally and proceed slowly and cautiously. Even when the greatest of care is exercised the highlights will often become over-dense by the time the shadows have acquired sufficient detail and density. The only remedy then is to reduce these highlights afterwards. Ammonium persulphate will be found most suitable for this purpose, as you require something that will attack the highlights first and thus bring them into correct relationship with the shadows. The formula for Universal Developer and the methods of handling it, fully set forth in Volume II, apply to this class of negatives.

263. **General Hints.**—While excellent effects may be obtained on ordinary plates, orthochromatic plates backed and used in conjunction with the ray filter will be found very valuable, although it is unnecessary to employ the filter when photographing in the early morning or late in the evening.

264. **Films.**—Films have a great advantage over the ordinary plate for landscape photographs, as the halation

which is bound to appear from bright patches amongst the foliage is reduced to the minimum. Again, when using ordinary plates for landscape work, have them backed. The non-halation plate takes the place of the ordinary plate backed, but it is a trifle more expensive and the results secured are in no way superior to those obtained on the backed plate.

265. **Exposure.**—Exposures given for sunlight pictures are sufficiently short to admit of the use of hand cameras, although it is in every case advisable to employ a tripod when working for pictorial effect. You can obtain the desired results if you arrange the composition carefully on the ground-glass and spend considerable time examining it critically for imperfections. It is permissible to doctor a negative by blocking out certain portions, but it is much better to avoid all such after-labor by carefully focusing and composing the picture before making the exposure.

266. **Practice Work.**—For practice work *select* some convenient scene that appeals to you. Before attempting to photograph it, however, study where you will set the camera; in other words, select your *view-point.* This you should be able to accomplish with considerable ease, if you have carefully digested the foregoing lesson work.

267. Make good proof prints from each experiment; make your notations on the back and file them in your proof file for future guidance.

## CHAPTER VIII.

## SUNLIGHT ON LANDSCAPES RENDERING LIGHT AND SHADE.

268. **How to Expose.**—Perhaps in your photographic work you have been led to believe that if you have a bright sunny day you will be assured of splendid results. On the other hand, if the day be at all dull you were inclined to think that extraordinary exposures would be necessary, and that poor results would invariably follow. As a matter of fact, the true rendering of sunlight in landscape is one of considerable difficulty, for it is no easy matter to secure in bright sunlight proper gradation and absence of harsh contrast. The great difficulty lies in the fact that with the correct exposure for the highlights the shadows will almost always be under-exposed. On the other hand, if we hold to the old rule, "expose for the shadows, leaving the highlights to take care of themselves," the sunlight portions will come out extremely hard and dense. In work belonging to this particular class of landscape photography, you will find the most satisfactory method is to follow a middle course in the matter of exposure; i. e., expose for neither shadows nor highlights, but strike a mean between them.

269. **Best Time of Day for Sunlight Effects.**—The best time for securing sunlight effects is early in the morning and late afternoon, for at this time you will secure the softer rendering of the light and not obtain the full strength of the piercing rays. In the middle of the day, when the sun is clear and comes down harshly upon the scenes, your negatives, made under such conditions, will give very unpleasing prints. Be up and into the woods or fields before breakfast. If you do not at first secure superb pictures, you will

at least enjoy the freshness and beauty of the morning; and further, learn to appreciate delicate tones and charms of softly rendered distance in the landscape.

270. **Protect the Lens from Direct Sunlight.**—Be sure to guard against the sun shining into the lens. In taking pictures in the woods, you are particularly liable to have a good plate spoiled in this way; for you may have such a keen intent on securing the sunbeams that you will forget that a fluttering leaf may admit a full ray of sunshine just at the critical moment of exposure. Take care, therefore, that the lens is well protected from direct sun rays when the sun is in front of the camera, as it may be when attempting to produce odd effects.

271. **View-point.**—Choose, if possible, a point of view that includes the least number of scattered highlights. Of course there will be one pre-eminently suitable spot for the effect you desire, but before making your exposure, be sure that you have fixed on that spot and that this is the best position from which to view the scene to best advantage.

272. In the morning the sunlight glancing through the trees is reflected by the bright green or moist surfaces of the leaves. Where considerable foliage is included, it comes out as extremely irritating white spots, which seldom fail to destroy the main effect unless you spend a laborious amount of time on the negative retouching them out. In taking pictures of this particular class nine amateurs out of every ten go wrong. They are deceived by the glittering foliage and their prints turn out as masses of formless white and patches of equally formless black. Even exerting the greatest amount of care and taking every precaution possible, you will find in many cases the strong highlights will need some reduction if you wish to emphasize the main effect. It is right here that your backed or non-halation plates will render you a great amount of assistance.

273. **Roads and Trees.**—There is something very fascinating in the vanishing point of a road or where it winds around behind a clump of trees. It really gives the observer a feeling of the enthusiasm of a pedestrian on a walk-

ing tour; one wants to go on and see what there is beyond that point.

274. *Simplicity,* as we have previously mentioned, is an extremely important factor and one of the chief virtues of road pictures, for they can be so simple and yet very pleasing; one tree, a bit of road and fence, and a nice sky are often quite enough to make a picture. As one of the most important principles of composition is *simplicity,* it is advisable to choose a simple subject and to try to do away with all unnecessary details, thereby strengthening what remains by concentration of interest. A road by itself seldom makes a good picture. The result, even if the long focus lens is used, is very disappointing, for the foreground is very difficult to manage; therefore, choose a road with a tree or two in the right position and your troubles will be at an end. It is unfortunate that trees are so seldom in a proper position; however, one may vary the point of view. Should the tree on the right appear to be an inch and a half too tall or too short on the ground-glass, or in the wrong position to balance the composition (you are not as fortunate as the painter, who can modify or leave out altogether what he does not want), you must choose a time of day in which the lightings will give you the proper effect. Also vary the point of view until you have secured a satisfactory arrangement. If you cannot, under these conditions, produce a proper arrangement, the only thing to do is to let the subject go and find another.

275. **Practical Hints.**—There are one or two technical points that might be well to consider at this point, regarding landscape work. Orthochromatic plates, which are sensitive to green, used with a ray filter are of great value. A filter that increases the exposure four times is usually sufficient, if it is used intelligently, but one increasing it six or eight times would be better. Such filters are called four, six and eight times screens, respectively. It is not good policy to lengthen the exposure too much, because even on a comparatively windless day the leaves of trees are never quite still, and, though a slight amount of movement of the

leaves tends to improve the picture, too much movement would spoil it; therefore, as is often the case in photography, a compromise must be effected and some of the correction of color values must be sacrificed for the sake of avoiding an excessively long exposure.

276. **Exposure When Using a Color Screen.**—We again mention the importance of correct exposure, for the tendency is, with the use of the screen, to under-expose. You will find that a generous exposure on an ordinary plate carefully developed will give a far better rendering of values than an insufficient exposure on an ortho plate through a screen; therefore, whatever you do, do not under-expose when employing color corrected materials. Bear in mind the character of the subject when making the exposure, and look at your subject with a "photographic eye," remembering that the lens, unlike the human eye, has no accommodating brain behind it and *strong contrast* in the subject, unless modified by exposure, will be faithfully rendered by the lens as *contrast*.

277. **Note.**—It is not our intention to give you the impression that it is an absolutely essential matter that you use orthochromatic plates and screens; in fact, to begin with, if you have had no experience whatever with them, our advice would be to use the plate that you are already familiar with. However, it is advisable to have the plate backed.

278. **For practice work** select some spot that will include a road and one or more trees, and proceed to secure a couple of negatives along the lines just described. Before making an exposure, however, be absolutely certain that the point of view selected will produce the very best rendering of the subject in hand; also watch out for the lighting effect, and if you think another time of day will give you a better effect, wait until you have the proper lighting. *Simplicity* in the subject will aid you a great deal in obtaining the best arrangement of composition.

279. Make good proof prints from each experiment; make your notations on the back and file them in your proof file for future guidance.

## CHAPTER IX.

### Part I.

### FIGURES IN LANDSCAPE.

280. As to the advisability of including a figure or figures in any view, ask yourself the two questions: *First, is the figure necessary to carry out the idea of the scene? Second, is the figure or the view the most important part of the composition?*

281. If figures are to be introduced particular attention must be paid to the location which you give them, as the misplaced figure might spoil completely the general composition of the picture.

282. **Size of Figure.**—If figures are to be introduced in landscapes, they should be large enough to at least be distinguishable. There are times, however, when a figure may be in the extreme distance, and by contrasting with the background form a valuable unit in the composition.

283. **Figures Out of Harmony With the Scene.**—No figure or figures should be introduced into a view if there is any tendency towards their detracting from the principal object of importance. The main object of having figures in a landscape is to assist, not only in the composition, but also in the general interest of the view.

284. **Crowding Figures in Foreground.**—If the figures are too near when photographing, and there is not sufficient space in the foreground of the resulting picture, too much attention will be called to the figures, thus detracting from the balance of the view.

285. **Figures Too Large.**—Be very careful that your

figures are not too large for the landscape and thus also ruin the landscape proper. Also, when photographing groups do not have them too closely packed together, or scattered too much. It is necessary that you use judgment in the placing of figures in all landscape work, bearing in mind that you are reproducing landscape scenes and not making portraits.

286. **The Horizon Line.**—When a figure appears in the landscape the mistake is sometimes made in having the horizon too low, giving the figure the appearance of extreme height. This error is especially marked in hand camera work. The reverse fault, of the horizon being too high, seldom occurs, but when it does it will give the effect of looking up hill.

287. **Composition of Foreground.**—Of all the parts of a picture the foreground is the most important from the standpoint of composition. It has always received the greatest amount of attention from pictorial workers, while the careless user of the camera often meets with little success in properly rendering this important item.

288. First, because its importance has been disregarded, and second, because it is the most difficult to arrange and regulate in a satisfactory manner. It not only calls for an intimate knowledge of nature, but also an infinite amount of patience in its execution, both of which are difficult matters for the beginner.

289. **Narrow Angle Lens the Best.**—The most commou fault which presents itself in the handling of the foreground is derived from the use of a lens of too wide an angle, so that too much of the immediate foreground is included. The distance is thrown back too far, and when the print is made it requires a considerable amount of trimming away of the foreground. Thus, a long narrow picture seems more artistic, because of its shape; whereas its pleasing effect is chiefly due to its giving the impression of a narrow angle of view. The practical solution is the use of a long focus lens so as to secure the same effect on a larger scale.

290. **Proper Focal Length of Lens.**—If you are using

"FAIRY TALES"

Study No. 14—See Page 309

By Edmund L. Sanderson

THE EDGE OF THE CLIFF

Study No. 15—See Page 311

By Myra A. Wiggins

a single lens on a 3¼ x 4¼ or 4 x 5 plate, it should have a focal length of not less than 6 inches. If you are using the rapid rectilinear lens for this same size plate, the focal length can be 5 or even 4½ inches, as this can be increased to approximately 10 and 9 inches, respectively, by removing the front combination. Lenses of this type, therefore, combine the greatest advantages of wide and narrow angle.

291. **Caution.**—You must not forget that employing the single combination of a lens, thus doubling the focal length, changes the value of the stop (or diaphragm) and requires a proportionate increase in the exposure.

292. **Focusing.**—A *second difficulty* which is met with in the composition of the foreground is the inclusion of detail. With *landscape painters* this necessarily involves an intimate knowledge of ground and herbage structure, and a corresponding ability for accurate drawing, but the *photographer* is spared this knowledge, for the lens gives him the necessary accuracy of form. But, though this difficulty is removed, others equally as great present themselves and take its place; for if you will focus the foreground the distance is thrown out of focus, and if you overcome this by stopping down the lens, you will lose atmosphere and perspective. One of two things must, therefore, be decided: Is the foreground or the distance of most importance?

293. This you must decide for yourself when you arrange the subject upon the ground-glass screen. If the beauty of the scene depends upon the delicate features in the foreground, the descending curve and uneven shadows of the soil, or the beauties of waving flowers and grass, then the foreground contains the principal point of interest, and the camera should be placed low and the focusing so accomplished that enough detail is given to the objects nearest the camera, without destroying the alternating and broken lines of the middle and far distances.

294. On the other hand, if the foreground contains nothing of interest, and the motive of the picture is in the distant detail, then place your camera at a higher view-point and use a lens of narrow angle.

295. **Use of Rising Front.**—The wise employment of the rising front of your camera will often serve to remove a bare expanse of foreground and save the use of a trimming knife. *Trim your photograph on the ground-glass.* One is often advised to use two L-shaped pieces of cardboard when trimming prints, placing these upon the photograph in the manner of a frame, and the effect tried by cutting out different parts of the picture. But the edges of your ground-glass will answer this same purpose, the only difference being that the picture is moved within the space, instead of the frame enlarging and diminishing. If you will use the rising front judiciously there will be no need of your cutting away various portions and reducing the size of the original.

296. Space your foreground properly. Include only those features which are of interest, and which assist in setting forth the main idea to be carried out in the picture.

297. **Light and Shade.**—The *third point* in the consideration of the foreground composition is the study of light and shade. There is nothing more interesting than shadow. The strange shapes it assumes cannot be imagined until you study the stretched, flattened and other shapes into which it falls. No foreground requires trimming if it contains these forms. They occur mostly when the sun is to one side of the camera.

298. **How To Make the Foreground Interesting.**—*Lastly*, do not forget that it is possible to make a foreground interesting, even though it seems at the time to be absolutely devoid of that quality. If upon viewing a certain landscape for the first time you miss the points that would make it artistic, view it at another time of day, when the lights and shadows fall differently. Under the various lightings you might see a great improvement and be able to photograph the scene at its best,—according to your conception, at least.

299. A long focus lens and the judicious use of the rising front will tend to improve the appearance of the foreground. Frequently you will secure better results by breaking up

the foreground with the bough of a tree, carried from some adjoining spot; or, with large stones collected from the neighboring ground; or by the introduction of flowers, or a suitable figure. Should the foreground contain still water, the dull and uninteresting surface should be disturbed by throwing in a stone and making the exposure as the ripples of water eddy to the bank, producing wavy and varied reflections.

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Part II.

## STREET PHOTOGRAPHY.

300. **Camera for Street Photography.**—Pictorial results are often difficult when making photographs of city streets. Many of the difficulties, however, may be overcome by the use of a suitable camera.

301. *First,* the camera should be ready for making the exposure at any moment, so that a view can be recorded the instant it is recognized and before it disappears.

302. *Second,* the camera should attract as little attention as possible. The box, magazine, film, or pocket type of camera has a decided advantage over the combination hand or tripod bellows camera, because the latter is more elaborate and attracts undue attention.

303. *Third,* a large view finder is preferable, as upon it must be arranged all the composition of the picture. In the constant shifting and changing of the figures in a street, people readily fall into groups that are naturally pleasing and conform to the fundamental rules of composition. The finder should be large enough to permit these picturesque groups to be readily recognized—given their proper position upon the plate—so that the exposure may be made at the right moment. If it is not possible to have a large view finder and you are using the box type of camera, lines may be drawn from the two front corners on the top to the center of the back of the camera. By forming a V along these two

lines, carrying them into the picture space, you will be able to ascertain the boundaries of the angle of view. All objects situated within these boundaries will appear on the ground-glass, or be reproduced on the negative. Many cameras of the box type have these two lines already drawn on them for this particular purpose.

304. **Exact Moment for Making the Exposure.**—The exact moment for making the exposure is often quite difficult to determine. If not watched for with extreme care the result may be spoiled by the sudden intrusion into the picture of some unlooked for object. *The reflex type of cameras are excellent* for this class of work. It is absolutely necessary that you remain perfectly cool when releasing the shutter. You must not fumble at the slide in the plate holder or at the focusing pinion. Be in readiness for instant exposure; the best things last but a second and are gone, and it is the quick and alert photographer who secures them.

305. Take care that the persons included in your view are not looking towards the camera with their mouths open; and remember that at almost any moment something is very likely to come up that will ruin the pictorial qualities of a street photograph.

306. **Strategem.** — It is policy, sometimes, to steal upon your subject unawares, that the figures in the scene may be taken in natural position, not staring at the camera or adopting attitudes that will not carry out the idea you wish to convey. True, this is not an easy thing to accomplish, but by the aid of a little strategem you will meet with success. For instance, you might pretend to be taking a view in the opposite direction and draw the crowd of undesirables back of the camera; then, wheeling around, quickly expose on the real scene before those in it are aware of what has happened.

307. **Lighting.**—Be careful about the lighting. A strong light on one side and dark shadow on the other is a common occurrence when the brilliant sunshine strikes the street at certain times of the day. One part of the thoroughfare is flooded with intense light and the other is al-

STREET IN OLD JAPAN

STUDY NO. 16—See Page 308 BY WM. H. PHILLIPS

"THE MAN ON THE BOX"

STUDY No. 17—See Page 310 By DR. A. R. BENEDICT

most black in shadow. The finest effects will be secured on dull days, on foggy days, and on wet days; although, the strong sunshine is what tempts the average photographer out of doors. On wet days the streets are most picturesque, for that which is unsightly to the eye in sunlight is then hidden in shade and fog. Carriages present a very effective appearance as they loom large and mysterious out of the mist. (See Study No. 17, "The Man on the Box," by Dr. A. R. Benedict.)

308. *Remember that these things are not taken by the photographer who ventures out but seldom with his camera. They are the reward of the person who is constantly on the watch, who has had many failures, and who has learned that the best things in photography are not the outcome of luck, snap-shots, nor the result of accidental association of events, but the returns of painstaking labor and hard experience.*

309. **Practice Work.**—For practice work take a landscape scene and properly introduce into it a subject of some kind and make a negative.

310. For another subject select some general landscape view that is extremely simple, and make an exposure. Then take this same subject and introduce something of interest in the foreground and secure the very best rendering possible, carrying out the instruction which has preceded, regarding the "composition of foreground." The subject for "Street Photography" will depend upon existing circumstances; but you should try to carry out the preceding instruction in obtaining subject material. Even though the first attempt is not satisfactory be guided by the results.

311. Make good proof prints from each experiment; make your notations on the back, and file them in your proof file for future guidance.

## CHAPTER X.

### FORMS OF COMPOSITION.

312. One of the clearest and most concise articles on the subject of pictorial composition for beginners was given by Mr. J. W. Ridpath, before the Photographic Section of the Franklin Institute. As the paper contains much of value and concisely summarizes what has preceded in this volume, we reproduce it here for your benefit.

313. "**Pictorial Photography is a Very Broad Subject.** —It deals with selection of subject, grouping, composition, light and shadow, focusing, making of negatives and after-treatment of the same, printing and mounting, each being a separate step toward the finished picture. For the present purpose it is intended to speak briefly upon only one branch of the subject.

314. "**Pictorial Composition** is based upon certain well-established and generally accepted rules, or general principles, which, although somewhat elastic, are found to be generally observed by artists everywhere. Some say art is subject to no set rules, for its variations are infinite; yet nearly all agree that it has certain general principles. In fact, almost all pleasing pictures, whether paintings, drawings, etchings, photographs, or those made by any other process, are found to be based upon some of these rules.

315. "In a short article like this, it is only possible to refer briefly to a few of the more important or fundamental rules of composition, omitting such subjects as lighting, atmosphere, balance, etc. A careful observance of the following nine rules will greatly aid the young photographer in making more pleasing, and consequently better, pictures.

316. (1) "**In Selecting a Subject** to photograph there

is always a principal object—that which you want a picture of. It should, if possible, be placed to one side of the center and below or above the middle line. In other words, place the principal object in one of the natural quarters of the picture space.

317. "**The Principal Object** should, if possible, be supplemented by one of lesser importance as a secondary object. If the view contains trees, a position may be selected where a handsome or picturesque tree will occupy a point near the camera, in or near the foreground, as the principal object. This might be supplemented by a small tree, of somewhat similar shape, in the middle distance. A group of men or women might be supplemented by a group of children placed at a little distance. A church or other important building, in perspective, might be supplemented by a smaller building in another part of the picture.

318. **(2) "Objects Should be Few in Number and Simple in Character.**—A group of two or three trees look much better than a picture showing an extensive and elaborate collection of shrubbery. The latter may look beautiful to the eye, but the former will yield a more pleasing picture. One shock of corn, well to the front, with a few others less distinctly shown in the distance, is much better than a number of shocks, equally spaced, at nearly the same distance from the camera. Two or three figures may be satisfactorily grouped, but to make a picturesque group of a dozen will require artistic skill of a high order.

319. **(3) "In Order That Your Picture may Look Natural, the Surroundings Should Always be in Keeping with the Principal Object.**—To illustrate: A lumberman's or hunter's camp may look well in the forest. A fisherman's boat and nets should be beside water. A wagon loaded with logs might appropriately be coming out of the woods. A farm team should be engaged at some regular farm work, with appropriate surroundings, such as ploughing, hauling grain, raking hay, or any other useful farming operation. A quaint stone arch, or rustic bridge, may impress you favorably; if so, you will find that a willow tree, group of

shrubbery, or even a bunch of tall weeds, if near the camera, will add greatly to the picturesque effect.

320. **(4) "The Principal Forms of Composition are Three in Number. The Angular Form** may be illustrated by drawing an imaginary line diagonally from an upper to a lower opposite corner, thus dividing the picture space into two triangles. The principal object may be advantageously placed in the lower triangle; the secondary object may be placed in the lower half of the upper triangle as middle distance, while the upper half of the upper triangle is occupied by the sky or other background. Sometimes a very handsome angular grouping is effected by placing the principal object in the upper triangle of the picture space with the secondary object in the lower triangle.

321. **(5) "The Pyramidal Form of Grouping** is particularly good for strong objects; being shaped like a mountain it gives an idea of stability. The tall tree, church tower, a house in perspective, or tallest man in a group, occupying a somewhat central and commanding position a little to the right or left of the center of the picture space, might form the basis of a good, strong composition.

322. **(6) "The Circular or Oval Forms** are light and graceful, and lend themselves naturally to groups of shrubbery or flowers, and still-life objects; curved or radiating forms are quite plentiful in nature. The dependent branches of the elm and willow, the oval form of the violin, many articles of glass and porcelain, the spray from a fountain, a vase filled with flowers, the oval form of the human face, and indeed the long oval of the human frame, are illustrations of this graceful form of composition.

323. "You do not always find objects that compose readily; perhaps the fault is in the objects themselves; perhaps it is the wrong time of day, or time of year, conditions are not always alike. Change your position slightly and look again. IF THE IMAGE ON THE GROUND-GLASS IS NOT PLEASING, WHY EXPOSE A PLATE?

324. **(7)** "It is important that the principal lines of the picture be so placed as to enhance its beauty; otherwise

they may detract from it. Generally the horizon or sky-line in out-door pictures should be placed about one-third distance from the top or the bottom, *not half-way up. In many cases the sky-line is quite important.* A gently undulating foreground with hazy distance is suitable for peaceful farm scenes. Rugged mountain scenery might appropriately have a saw-tooth or jagged sky-line.

325. **(8) "All Important Lines, Such as Fences, Road, Streams, Etc., Should Lead into, not out of, a Picture.** —They should be so placed as to lead the eye unconsciously toward some point of general interest. For the above reason a cross-road picture is seldom pleasing. If the important lines conform to 'Hogarth's line of beauty,' a graceful double curve, they will greatly enhance the beauty of your picture.

326. **(9) "Figures,** if included in a landscape or other view, should always be appropriate in character and in keeping with the surroundings. A farmer at work in the fields, dressed in his working clothes, is more picturesque than the same man in his best 'bib and tucker' entertaining company on the front porch. A hod-carrier would look better with a pipe in his mouth than smoking a cigarette. Two girls in sunbonnets, picking blackberries, might add life to the scene; but two young ladies dressed in silk and lace, wearing ostrich plumes on their hats, would be out of place among blackberry briars. Perhaps there is no more certain way to spoil an otherwise good picture, than to pose your cousin or best girl in the picture center, with nothing to do but stare at the camera. If you must place her in the range of the lens, give her some appropriate employment, such as picking daisies, golden rod, or other wild flowers, but if you value her friendship, don't have her looking at the camera. To do so will probably spoil the composition and the portrait is almost sure to be disappointing.

327. "Some persons might object that these rules, or general principles, are not practical; that many views cannot be artistically grouped. It is certainly true that many views are quite commonplace, having nothing picturesque

in them. In an afternoon's outing the camerist may pass a hundred views, many of which have some attractiveness, but only one or two appeal to him. While you cannot move the wayside cottage or trees, you can move the camera. Select the most important object and give it a strong place in the picture space, a little out of the center. Select a few objects, not too many, as accessories; *most views contain too much.* Try to find a suitable foreground. Move a little nearer or farther away; to the right or left; raise or lower your camera. While the principal object should occupy a strong place, the view should be considered as a whole, unity or oneness being all important. If you spend a little time intelligently studying the scene, the chances are that you will secure a much better picture than you could by a 'hit or miss' method. REMEMBER THAT ONE GOOD PICTURE IS WORTH MORE THAN TEN POOR ONES."

## CHAPTER XI.

## GENERAL TALK ON COMPOSITION AND ART.

328. Composition is the creating of a subtle arrangement of lines or forms in photography which shall present a beautiful whole. The object of all composition in photography is to give pleasure through the picture. The composed picture is to the eye what music is to the ear. It may be harmony or discord according as the arrangement is good or bad. The most important factors in composition are design and pictorial value, the difference between them being that the first may disregard scientific truth, while the latter conforms to it.

329. The value of design in composition is that it brings abstract ideas into concrete form. Its forms are idealized. In landscape pictures we must consider the element of truth, and we are limited only by the necessity of following nature. For instance, in design, one may have no shadows at all and relative sizes of anything one pleases. In picture making, while we may transform trees into bushes, leave out fences, put in houses, color values, etc., we must preserve the appearance of truth, at least in the local color and the perspective of the picture. We need not tell the whole truth, that is, reproduce every individual leaf upon the tree, but we must give a truthful impression of the tree as a whole. We should not show any contradiction to scientific truth. Mere fidelity to nature in picture making is only giving a record of fact, pure and simple. It does not give the picture artistic value, any more than being alive and human makes us all beautiful. Truth to nature may exist with complete absence of beauty, yet beauty is necessary to give pleasure, and since the object of all art is to please, all pic-

tures must be beautiful, either in themselves intrinsically, or in their expression.

330. Beauty, then, being the vital spirit and the essence of all good art, it is natural to ask, first, what is beauty? The poet Shelley says, "Beauty is truth and truth is beauty, and that is all there is to it." But after all is said, this definition of beauty is narrow and limited to one point of view. It must also include the creative imagination. The artist must first think of his subject in a certain effect or design. In photography he must think of his subject in light and shade, beauty of line, atmosphere and perspective. Having created the effect in his own mind he then makes the picture. In this way the creative imagination comes into photography with design, and when they both come into any art, that art becomes a fine art. It is not the beauty of the subject, but the beauty of the form which the imagination of the artist gives to the subject, that makes the photograph artistic.

331. If the photographer has had art training, composition will help him to create something in a design, and this design must be beautiful in itself, apart from what it suggests or signifies. Unless the photographer is something more than a mere recorder of facts, he does not portray beauty, nor does he give pleasure. To be artistic the photograph must be pictorial, must follow the accepted rules of composition, light and shade, and must express beauty in an unmistakable manner. It must show temperament, and a personal intent on the part of the photographer to express beauty to be called art. All these principles may be learned from the works of the great masters. They are primarily and briefly summed up in this one word, "composition." With these preliminaries, laid down as essential to right picture making, it is easy to see that the quickest way to arrive at art in picture making is by process of elimination.

332. You should take out the things in a picture that are not artistic, and secure the features that are artistic from among what remains. You can, for instance, eliminate the

scientific, the commercial and even the pictorial aspect of the picture.

333. The photographer may be artistic, first, in his choice of subject; second, in his arrangement; third, in his handling and technique.

334. In every picture there is a central point of interest in the choice of subject, which holds the greatest amount of attention. This represents the subject value of the picture. It is essential that this should, of course, be pleasing and beautiful.

335. If the photographer is artistic he will demonstrate this fact in his arrangement of the subject chosen. Arrangement, or composition, is probably the principal thing for the photographer to consider. In landscape studies, for instance, he can divide this arrangement under two heads,—first, in the selection of a subject, and second, in the arrangement of the details.

336. This choice of a subject is largely a personal matter. The arrangement of the details calls for more attention. It can be better understood perhaps with a knowledge of how the system of arrangement has been historically evolved. The first arrangement in picture making was made by the Egyptians, thousands of years ago. The Assyrians also had good ideas of drawing, though they knew little of arrangement. There was first, a series of upright lines opposed to horizontal ones. Then, somebody succeeded in evolving curved lines, and the Greeks improved upon this form some hundreds of years later. That is, they broke the line off. The Romans went still further and made spiral lines, all of which represented progress and improvement over the original straight line, and so composition in picture making progressed by degrees in this way.

337. The composition of the Egyptians was made up of straight figures, and, therefore, was represented by a number of straight lines. The Greeks filled up their forms by posing the straight lines in opposition to each other, at very nearly right angles, but it was all straight lines and there were no flowing curves in it.

338. The Romans, however, carried composition still further and began to use another form of curved lines, which ran together and made a sort of hollow form. From that time to the days of the early Renaissance, it is not difficult to follow the development of the art of picture making.

339. Following on this question of lines comes the question of the manner in which the subject should be presented. Every picture should have a story telling quality. Story telling pictures have long been decried by modern art critics, but the times are changing.

340. In a recent interview in Paris, Sir Caspar Purdon Clarke, of the Metropolitan Museum of Fine Arts, of New York City, was reported to have expressed the following sentiment: "They talk about tone pictures, which are all technique and nothing else. But what's the use of a picture if it does not tell a story or convey an impression? The painted picture, in order to show off technique, is on a par with making a chair which cannot be sat in. Neither serves a purpose, except it be to express the soul of the artist or cabinet-maker." There is much of truth in this sentiment, and the time has come for artists to get back to nature and common sense and tell us stories in their pictures that will yield present enjoyment.

341. American artists have been perfecting themselves in the rudiments of art. Americans, especially, are showing, not only here but in foreign schools, an inclination in this direction. They have vigor and character, while much foreign art, especially in France, is barren of originality.

342. Whistler was probably the first to declare himself against story telling pictures, but today the trend of art in picture making is decidedly in the opposite direction. Artists in the past, by their attitude in their works, have too often aided the notion that art is exclusive and not for the poor or the lowly.

343. Ruskin defines composition as "the help of everything in the picture by everything else." The effect of the whole in any picture will not be pleasing unless the elements that make up the picture are well composed. For this reason,

the object selected, besides being beautiful in form, should be pleasing in association. If the picture is a group some thought must be given to the arrangement of the individual items. If arranged one way the group may be very pleasing, if arranged the other it may not be so pleasing. So, in studying the arrangement of any group, consider first the place of the principal object; second, the place of the subordinate objects; third, the figure made by the group; fourth, variety; fifth, repose; and sixth, unity of the group space relations between the objects. Both variety and repose contribute to the unity, but where unity is lacking, repose is always lacking too.

344. Placing one object farther back than another suggests distance in a picture, which is always pleasing, as it brings with it the idea of freedom and atmosphere. If one of the objects is placed so that its leading lines tend *from* you, it will also aid in producing the effect of distance. In fine, consider the general space relations with a view to enclosing the group in the picture so that it will hold well together.

345. Placing the objects in a picture is always a problem. Never place the principal object centrally in the picture. Do not place the other objects in a straight line with the principal object. The rendering of a group of objects, that is, the quality and variety of the lines used, should be such as to suggest the leading idea of the group. The addition of a background will often give a foreground, middle distance and background, which adds very materially to the construction of the picture and lends it importance. In addition to all this, there is also the question of light and shade, which includes the study of light and shade effects. These may be expressed by lines, varying according to the degree of shade and shadow in the picture. Examine the picture: The part toward light is of a different tone from the part away from the light. Thus, we have light on the part towards the light, shade on the part away from the light, and the shadow cast by the object. Three distinct conditions of light.

346. By half closing the eyes and looking carefully at

the shadow on the subject, you will see what artists call the breadth of light and the breadth of shade in the picture—that is, the light side as a whole and the dark side as a whole. The shades and shadows will be different for each person viewing it, and each one must study this for himself. Note the relative tones of the lights and shades and the shadows cast; what is lightest, what is darkest, and what is the middle tone between these two extremes?

347. In taking up this question of the use of light and shade in picture making, it is interesting to note how the old masters have handled this subject. It is said that Rembrandt in his scheme of composition took a lens and cast the light through the lens upon the wall obliquely, so that the greatest light came out on the left hand of his picture and the greatest gray came on the right. Now, this will be the focus of the light, and the tail of the focus will come on the other side in the gray shadow. If you will turn this position up side down, you will see that it suggests the form of Rembrandt's best composition, viz., opposing the greatest light to the greatest dark, graduating towards the edges. It was his custom to pose a dark, swarthy head, or face, against a white cap and underneath. Then the highlight of the face graduated it as it came down, until it got off the line.

348. Another form that he used was to break the picture diagonally so that it made all one side dark, letting in light in some places, dark in others. These Holland painters posed the very darkest figures to the light in the center of their composition, and then graduated this shadow toward the edge. Thus they concentrated the interest by making the dark edge and the light edge meet. The eye is directed only to this point. They claimed that you look into the center of a picture at once. They said when you opened your eye that it naturally sought the floor line or the ceiling and then swung up onto the wall where the picture hung. If that be true, then the eye travels in a curve, or path, made for it by the photographer.

349. The eye naturally seeks the principal point of interest, and if there are a number of interesting spots dis-

tributed through the picture, it goes naturally into the picture, touching first the least important, then the more important, then the most important points. Arriving at the center, if the picture is well composed, your eye will continue to move in a circle unless deflected by the composition. The clever artist will make his picture in such a way that the eye will not get off the picture. A spot here and a spot there will hold the interest.

350. It has been truly said that the artist feels for the surface of his object and unconsciously adapts the lines of his picture to express this feeling. And feeling counts for more than physical seeing in all landscape work. All good rendering of landscape requires elimination on the part of the worker. Skill and genius is shown in selecting only those things that help along the impression of the chief object of interest. All artistic rendering of nature is a translation, not an imitation. An imitation of nature is always imperfect and unsatisfactory. A landscape photograph may be absolutely correct so far as the appearance of the object or scene is concerned, yet be wholly without what is known as artistic expression. In seeking for realistic details in landscape work the spirit of the scene is often sacrificed. Selection is here again largely a matter of individual feeling. Thus there is an opportunity for self-expression in this kind of work that should be improved.

351. Besides unity, one of the most important qualities in pictorial composition is the effect of repose, produced by the proper arrangement of the objects in the picture. This effect will be increased if the transitions from light to dark are gradual and not violent. The simple harmonies are the most attractive. All kinds of lines should not appear in the same picture. If we can make ourselves understood with two or three principal lines or combinations of them, the result is better than trying to put a number of them all in one picture. Study the proper distribution of lines as well as of light and dark. Pictures are fine only as they conform to the principles of beauty. These great principles cannot be ignored. They may be combined in newer ways, but to ignore them al-

together is to leave out beauty, and beauty is the essence of every good picture.

352. To sum up the story of composition in picture making, consider first the principal object and generally place it centrally in the picture, but not exactly in the center. Secondly, do not place objects in a straight line with this principal object. Thirdly, try the effect of placing objects so that if the centers of their bases were connected an irregular line would be made. Fourthly, place them as if they belong together. Fifthly, place them in such a way that they will appear at rest. Sixthly, remember that objects should not have the same positions; that is, their axes should not be all upright or horizontal; they should not be parallel, or at right angles to each other. Seventhly, one of the objects should be partially hidden behind another, even if there are no more than two objects in the group. Finally, note if in the group you have made the objects appear of the same height. If so, change them, as the effect will not be pleasing. Observe unity, repose and variety, as they are all essentials to good pictorial composition. In fine, consider the general space relations as a test for the whole picture.

353. Contrast of form, proportion, etc., are intensified when contrast of value is added, and by introducing values we may either support or neutralize the line composition.

354. From the foregoing it is evident that composition includes not only selection, arrangement, proportion and space relations, but may also be studied in the works of the great artists. It can be produced only by the individual, as it of necessity implies original work. A true picture not only shows how an object or a group of objects appear, but also tells how the object looked to the person who made the picture. It tells not only what was seen, but also what he thought about the object. Whoever makes a picture tries to indicate in the photograph the part he cares for most. He also tries to show his ideas of beautiful composition. This human element added to the presentation of the subject is what makes the real picture. In all this, space relation and line direction unquestionably play important parts, and it

must be remembered, in the end, that composition appeals directly to the creative faculty in the artist.

355. Composition stands for individuality in art. It is a method of expression, not simply an impulse. The artist is one who has mastered the laws of his art and he cannot progress, we repeat, without regard for those laws of composition that have been discovered and formulated by the master artists. These underlying principles are as fundamental in art as the laws of nature in the world about us. Just as the operation of certain laws keeps the natural world in beautiful order, so, certain recognized principles in the art world underlie all artistic work. While this work may be original and individualized as a whole, it should proceed according to method and in an orderly fashion. The lines in the landscape should contrast agreeably and the spaces bear pleasing relations. This harmonious proportion of the parts to each other and to the whole is secured by the observance of three simple laws, viz., principality, simplicity and repose to any picture. The law of principality means that one part of the picture should be more important than the other, hence contrast of dimension and value ensues. Opposition requires that there should be variation or contrast in direction of line and shape, while balance calls for a harmonizing of these contrasts so that the effect of the whole will be pleasing. In this way, one can develop judgment in arranging forms and ideas, and cultivate a power of idealizing familiar things in their relation to each other.

356. John LaFarge says: "I have far within me a belief that art is the love of certain balanced proportions and relations which the mind likes to discover and to bring out in what it deals with; be it thought, the actions of men, the influence of nature or the material thing in which necessity makes it work. I should then expand this idea until it stretched from the patterns of earliest pottery to the harmony of the lines of Homer. Then I should say that in our plastic arts the relations of lines and spaces are, in my belief, the first and earliest desires. And again I should have to say that, in my unexpressed faith, these needs are as needs

of the soul, and echoes of the laws of the universe, seen and unseen, reflections of the universal mathematics, cadences of the ancient music of the spheres.

357. "For I am forced to believe that there are laws for our eyes as well as for our ears, and that when, if ever, these shall have been deciphered, as has been the good fortune with music; then shall we find that all the best artists have carefully preserved their instinctive obedience to these, and have all cared together for this before all.

358. "For the arrangements of line and balances of spaces which meet these underlying needs are indeed the points through which we recognize the answer to our natural love and sensitiveness for order, and through this answer we feel, clearly or obscurely, the difference between what we call great men and what we call the average, whatever the personal charm may be.

359. "This is why we remember so easily the arrangement and composition of such a one whom we call a master—that is why the 'silhouette' of a Millet against the sky, why his placing of outlines within the rectangle of his picture, makes a different, a final and decisive result, impressed strongly upon the memory which classifies it, when you compare it with the record of the same story, say, by Jules Breton. It is not the difference of the fact in nature; it is not that the latter artist is not in love with his subject; that he has not a poetic nature; that he is not simple; that he has not dignity; that he is not exquisite; it is that he has not found in the nature of his own instinct the eternal mathematics which accompany facts of sight. For indeed, to use other words, in what does one differ from the other? The arrangement of the idea or subject may be the same, the costume, the landscape, the time of day, nay, the very person represented. But the Millet, if we take this instance, is framed within a larger line, its spaces are of greater or more subtle ponderation, its building together more architectural. That is to say, all its spaces are more surely related to one another, not only to the story told nor to the accidental oc-

currence of it. The eternal has been brought in to sustain the transient.

360. "Yes, the mere direction or distance of a line by the variation of some fraction of an inch establishes this enormous superiority—a little more or less curve, a mere black or white or colored space of a certain proportion, a few darks or reds or blues. And now you ask, 'Do you intend to state that decoration —?' To which I should say, 'I do not mean to leave my main path of principles today, and when I return we shall have time to discuss objections. Besides, I am not arguing; I am telling you.' "

# CHAPTER XII.

## DIFFICULTIES—LANDSCAPE PHOTOGRAPHY AND COMPOSITION.

361. **Unsatisfactory Results in General.**—In the first place, unsatisfactory results are often caused from not taking time enough to compose the picture properly. Do not hurry the exposure, for, if you aim to produce artistic effects in landscape work you must allow of sufficient time to study the various masses that go to make up the picture space. The point of view is an important factor, but it should receive less consideration than the subject itself. Before attempting to set up your camera ask yourself this question: "WHAT IS THERE IN THIS PARTICULAR VIEW THAT APPEALS TO ME, AND IS THIS SUBJECT WORTH TAKING?" With this question answered to your satisfaction, you are ready to either go ahead and set up the camera or to choose another subject.

362. If this view is a desirable one you should proceed to select the point of view from which you are to work. Continual study of this view must be made, and if for any reason it does not meet with your approval, by no means waste a plate on it. Another point is, that the lighting has a great deal to do with composition, and if the sun does not shine from the proper direction—casts shadows which, in your mind, could be improved by some other lighting—wait and see if a different time of day produces better results.

363. Snap-shots of landscape subjects are not advisable. Where you wish to secure the very best artistic work use a tripod that is strong, rigid and adjustable to various heights.

364. It is not absolutely necessary to have a shutter for landscape work, as you can use the lens cap in making the exposure. A shutter is, however, a convenient accessory. There might be times when you have a subject that, owing to its rapid motion, would require a quicker exposure than you could produce by a cap exposure.

365. **Flatness in Landscapes.**—Flatness is lack of atmospheric effect in the picture. The first cause of this defect is over-exposure; the second, employing too small a stop in the lens, thus securing too much detail, and definition in distant objects. Use the lens as wide open as possible for all landscape work, having only the main objects of attraction perfectly sharp. In case your lens does not cut

the plate sharp to the edges, use a small stop so that the entire plate may be covered to best advantage.

366. Careful focusing is one of the most important points for the landscape photographer to consider. As a general rule, the foreground is the chief point of interest, and this should receive the greatest amount of attention.

367. Flatness is also due to the bluish tinge that often exists in the air, which, after you have exposed your foreground sufficiently, will be very much over-exposed. To remedy this, use a color screen in conjunction with orthochromatic plate, the color screen cutting out to a great extent the blue rays of light, allowing all parts of the scene included in the angle of view to receive the proper amount of exposure.

368. **Misleading Effects Produced by Color.**—In many highly lighted landscapes the beginner will be misled by the brilliancy. In such a case, the photographic plate will not reproduce the effects as they are seen by the naked eye. It is advisable to reduce the scene to monochrome (one color). (See Chapter VI., Paragraph 209.) A piece of blue glass can be employed as previously directed, but if you wish to focus upon the ground-glass of your camera, *a blue glass lens cap will be found very useful.* If a picture is focused with a blue glass on the lens, a much better idea of the monochromatic result is ascertained and you can arrange the general mass and the balance and composition much more easily than if you were to be confused by the appearance of color.

369. **Difficulty in Photographing Woodland Scenes.**—One of the greatest difficulties in photographing in the woods is caused by the spreading of light which sifts through the branches of the trees in such a way as to cause halation. This will, of course, appear only where the trees rise above the horizon line, and the branches extend sufficiently high to allow the sky to form a background and the strong light to penetrate through the branches. To avoid this, non-halation plates should be used; or you can back the plates and obtain the same results. The method of backing the plates has been thoroughly described in Chapter V. You will also experience difficulty if you attempt to photograph dense woodland scenes in the middle of the day, when the rays of light fall perpendicularly upon the trees. A late afternoon sun is the best for photographing in the woods, especially when the trunks of the trees and the under branches require lighting. An hour's difference in the position of the sun may make the difference between a photographic record and a picture.

370. **Exaggerated Breadth in Foreground.**—The lens is a highly important item of the photographic outfit. This does not necessarily mean that it should be an expensive one, but one of considerable focal length, to give a proper rendering of the scene and not too

broad an angle of view to the foreground. A single achromatic lens will probably serve as good a purpose as an expensive anastigmat for this work. A useful focal length of the lens for pictorial landscape photography is from one and one-half times to twice the length of the base line of the picture. A narrow angle, or in other words, a long focus lens, renders more agreeable proportions, and, as we have said before, is to be preferred for landscape work.

371. **Unimportant Objects Attract too Much Attention.**—When using the large aperture of the lens for pictorial work, the object of chief interest should be in sharpest focus, and the other objects placed in subordinate degrees of definition according to their pictorial importance. If there are objectionable features within the picture space which can be easily moved, remove them before making the exposure. In fact, it is essential that you do all within your power to have only objects in the picture which add to the general interest and assist in carying out the idea which you wish to convey. Always have the strongest light on those items which are of greatest importance. If it is impossible to remove the unimportant features which attract too much attention, you should wait until a time of day when these particular objects are in shadow. Under no circumstance should an exposure be made when the strongest light falls on objectionable parts of the view.

372. **Unsuccessful Work on Windy Days.**—A great source of trouble to the landscape worker comes from the movement of trees caused by the wind, when you desire, perhaps, to use a color screen and orthochromatic plates. To obtain exposures under these conditions you should make a series of short exposures during periods of quietness. A prolonged double exposure with a screen can thus be given if necessary. Should the wind be so strong as to cause a vibration or movement of the camera during the exposure, you will be able to overcome this movement by tying a large stone to a string and hanging it to the tripod head.

373. **Pictures Appear Common and Uninteresting.**—This subject we have covered, to a certain extent, in the previous difficulties. Its cause is due to hasty work and inattention of the photographer in selecting and arranging the subject material. If the advice given in the preceding chapters has been followed, and you have selected simple subjects, arranged according to the fundamental principles of composition, your results will not be common, but will present pictorial sentiment. *Much attention should be paid by the landscape photographer to the lighting of masses; detail should receive only secondary consideration.* Light and shadow in landscape work are the cable and anchor of the pictorial photographer. Boldness of masses and breadth of effect are points that you must observe.

374. The carrying out of a sentiment or idea can usually be aided by appropriateness of the sky.

375. Among the things to avoid is the introduction of anything petty or commonplace, as well as the allowing of any spotty effect of lighting, often seen when the sun shines on or through leaves; for, in this latter case, the usual effect is that of snow instead of sun. *Do not try to portray the majestic and the grand in landscape, but hold to the more simple subjects which will*, with the beginner at least, *give the best picture.* The position of the sun may make all the difference in the composition of a landscape picture. An uninteresting view in the morning may become a perfect arrangement of lights and shadows under the effects produced by the afternoon sun.

376. **Cannot Secure Proper Arrangement.**—By simply reading over what has gone before, you will *not* be able to produce the highest class of artistic results. To produce artistic work means study and practice. Apply each and every principle given. We have tried to eliminate all technicalities and give *instruction*—every step of which is necessary to the obtaining of artistic results. Improper arrangement of masses and subjects in the picture space will be sure to follow if you do not carry out the fundamental principles herein laid down.

377. Remember, that of all the places in the PICTURE, *the center should not contain the main object.* Referring to Illustration 30, you will see where the strongest points for location are. Do not infer from this that the principal object should not be located *near* the center, for in many cases it is so situated. To secure the best effect, the most important items or masses in your picture should appear on the left side, the right side being left a blank, if you have nothing with which to fill it. But, if the right hand side is left perfectly blank it is necessary that your main object of interest be placed quite near the center, while if your right hand space contains some small object of attraction the main object to the left should be further removed from the center.

378. **Spotted Effect When Trees Appear in Landscape.**—This difficulty will be most apparent when photographing woodland scenes with the sun too high in the sky, causing the rays of light to fall perpendicularly upon the trees. The rays of light, coming through the branches, cause strong highlights and deep shadows. Under these conditions it will be necessary for you to choose another time of day —either early morning or late afternoon, when the rays of light are obstructed from entering the woods. It will then, of course, be necessary to give an exposure of considerably greater length than was required at noon-day.

379. When the landscape view contains a few trees, or even one tree, the same spotted effect is often obtained, especially if the

tree—or trees—is in the foreground of the picture. The same method of procedure applies here as in the case of photographing in thick woods. The more horizontal the rays from the sun, the less will be the spotted effect.

380. Rain or heavy dew on the leaves of trees will sometimes catch and reflect rays of light, and thus result in giving a spotted picture. To avoid this, do not make the exposure under such conditions.

381. **Road Scenes Uninteresting.**—Photographs of country roads will appear uninteresting if you have not given careful study to the subject you intend to photograph. You must select the proper viewpoint, as well as be careful in the choice of material that is to be included in the picture. As was said in Paragraph 274 of Chapter VIII, "Simplicity is an extremely important factor, and one of the chief virtues of road pictures; one tree, a bit of road, fences and a nice sky are often quite enough to make a picture." A road by itself seldom makes a good picture, for the foreground is very difficult to manage; therefore, it is necessary to have, in addition to the road itself, a tree or two in the right position. Greater interest can be installed in the scene if a team of horses and a wagon are introduced in, or near, the foreground. Care must be taken, however, that the moving object in the picture is not too near the camera, thereby attracting too much attention and perhaps detracting from your original intention of having a photographic reproduction of a road.

382. **Poor Results With Color Corrected Materials.**—The greatest difficulty here is in improper exposure—the majority of cases are under-exposures. We called your attention to this feature in Paragraph 276, and stated, "you will find that a generous exposure on a ordinary plate, carefully developed, will give a far better rendering of values than an insufficient exposure on an ortho plate, through a screen." Therefore, whatever you do, do not under-expose when employing color corrected materials.

383. **Over-correction.**—Another difficulty experienced when using the orthochromatic plate and a ray filter is the obtaining of *over-correction.* There are a great many cases in which it is absolutely unnecessary to use color corrected plates and ray filters. It will do no harm to use the orthochromatic plate, but judgment must be exercised in using the ray filter in conjunction with the orthochromatic plate. The main object of the ray filter is to filter out the blue rays of light and not allow them to act upon the sensitive plate. So, when you have a scene practically devoid of blue tones it will not be necessary to use the ray filter. This you will observe more strongly when photographing through a mist, haze or smoke. These conditions

act as ray filters themselves, retarding, as they do, the blue and violet rays of light.

384. Under no circumstances should the beginner attempt to use color corrected materials until he has become thoroughly familiar with the ordinary plate and is able to produce a negative of good quality on it.

385. **Figures in Landscape Too Small.**—When photographing landscapes in which figures appear, the great mistake beginners make is that they wait before making the exposure until the subject gets too far away. The beginner does not realize that every step the object moves away from him, just that much smaller will the object appear. The lens has not the accommodating brain to reproduce the object in the size that the individual imagines the object appears. You should practice with your camera previous to making an exposure by observing on the ground-glass the size of similar objects situated at varying distances from the camera.

386. **Figures Not Harmonizing With Landscapes.**—A great many landscape scenes require certain objects to carry out their meaning, while other objects would be entirely out of place and detract from the interest of the scene.

387. **Figures Too Large.**—This difficulty seldom occurs with the average amateur, but when the figure is too near the camera it will take up too much space and be more particularly a photograph of the figure than of the landscape. Consider whether you are to make a landscape picture, having the figure simply as an accessory to carry out your idea; or whether you must have the figure as the main point of interest and the landscape of simply secondary importance—more as a background. When a figure appears in the foreground of a landscape and the horizon is too low, the figure will be distorted and have the appearance of being a giant. This difficulty often occurs in hand camera work, and care should be taken then that the camera is not held too low.

388. **Groups Too Scattered.**—If there are a number of figures in the landscape scattered through the picture space, the attention of the eye will be distracted and not concentrated on any one item, thus causing an uneasiness to the observer which results in an utter failure, from the pictorial standpoint at least. Figures should be grouped to carry out the idea of the landscape, and should be arranged according to lights and darks, in a manner that will secure harmonious composition.

389. **Groups Too Large for Landscape.**—This difficulty is approximately the same as the one given in Paragraph 387. You must take into consideration whether or not the group or the landscape is the main object you are photographing.

390. **Uninteresting Foreground.**—This difficulty will occur when

you do not give this extremely important portion of the picture its due consideration. From the point of view of composition, the foreground should receive the greatest amount of attention; but, in the majority of cases the beginner and average amateur pay very little attention to the proper rendering of this item. Not only is lack of attention the reason for disregarding the foreground, but the difficulties experienced in arranging and regulating, in a satisfactory manner, objects and figures, as well as plants and animal life, are reasons for so many failures in properly handling the foreground.

391. A second and very common difficulty which leads to a valueless foreground is the use of a lens which takes in too wide an angle of view. If you have met with difficulty along these lines, you should go back to Chapter IX, and study again, very carefully, Paragraph 287 to and including Paragraph 299, as this feature of landscape photography has been dealt with most carefully.

392. **Lack of Interest in Street Scenes.**—This difficulty is also very carefully handled in Chapter IX, Paragraphs 300 to 307. The most common error made by the average photographer is that he waits too long after appearing on the scene before making the exposure. You should not wait until the people who come in the angle of view have become aware of your presence, for as soon as they know they are being photographed they will immediately assume attitudes which are entirely unnatural and unfitting to the street scene that you are attempting to photograph. In case the subjects included in your picture space have become aware of your presence, you must resort to some sort of stratagem. For instance, you can proceed according to the directions given in Paragraph 306. The lighting has much to do with increasing the value of a street scene. Many times obtrusive and uninteresting features can be thrown in deep shadow, while the important and strong characteristics of the street scene may be in a strong light, which will, of itself, accentuate and bring out, in the strongest possible manner, the pleasing and valuable items which make the street scene an interesting one.

## CHAPTER XIII.

## CLOUD PHOTOGRAPHY.

393. The landscape or seascape picture with sky is not complete unless it contains the proper cloud effect. The extreme amount of contrast between the light blue of the sky and the dark green of the foreground when registered on the plate with sufficient exposure to secure detail in the foreground, will produce nothing but chalky white sky. Over-exposure, almost a rule with the average amateur, may be overcome, to a certain extent, by employing a slow brand of plates. With these, a short exposure and small aperture is almost sure to give a result that may be carefully developed into a useful image.

394. **Regarding Exposure.**—The actinic conditions vary greatly with the time of day and the season of the year, as well as with the weather conditions. It is impossible to give a definite rule regarding exposure, except that which comes by practice. A deep, clear, blue sky as background allows of a much longer exposure than one in which everything is of a glittering silver gray. Then, too, much depends on the position of the sun relative to the clouds—the longest exposure being allowable when the sun is at right angles to the cloud.

395. **Double Printing Method.**—There are two practical methods which may be employed to secure cloud effects in pictures: One is known as the "printing-in" method, and this no doubt, when properly done, is one of the most practical ways of securing cloud effects. This method is many times an absolute necessity, if it is desired to have clouds appear in conjunction with the foreground, because it is not always possible to photograph clouds and foregrounds on the same plate. Results true to nature will be secured, however, when the clouds and landscape are

secured on one plate in the proper relative printing value, for then both the clouds and the landscape will be properly and similarly lighted. It is extremely important that the light on the clouds and that on the foreground fall at the same angle and in the same direction. There is nothing so irritating or displeasing as to see a print in which the clouds are lighted from one side and the landscape proper from the other. When this occurs it shows that the worker was either extremely careless or unobserving. Where the printing-in method is to be employed the clouds must be taken when they appear at their best, or when you find them to be adapted for a landscape in which you desire to have them appear. The resulting print, which will be a combination of sky and landscape, is obtained in the printing.

396. Notice Illustrations 40, 41 and 42. Illustration No. 40 is a reproduction from a print made from a regular cloud negative; No. 41 is a reproduction from an ordinary print which lacks clouds, while Illustration No. 42 shows the result of combining the sky with the foreground. Select the proper clouds for the view in which it is intended to use them. Although Illustration No. 42*b* is an improvement over Illustration 42*a*, yet it has a noticeable fault. It will be observed that the clouds are lighted from one direction and the landscape from another, while the river surface shows the blankness of a cloudless sky, instead of the heavy reflections which would appear with such a sky as shown in Illustration No. 42*b*. To attain a natural effect, the sky negative used should have been inverted—film side *out*—and the clouds lightly printed into the water space. Or at least the water portion of the print, before developing, (Gaslight paper) should have been toned down to a shade approximating but lighter than the sky tones above. In attempting to improve a foreground or landscape study by the addition of clouds, the aim should be to reproduce nature as near to the truth as possible.

397. A method by which the clouds may be registered in their proper value upon one plate with a foreground subject, is to cut off mechanically a portion of the light

Illustration No. 40—See Paragraph No. 396

Illustration No. 41 –See Paragraph No. 396

Illustration No. 42—See Paragraph No. 396

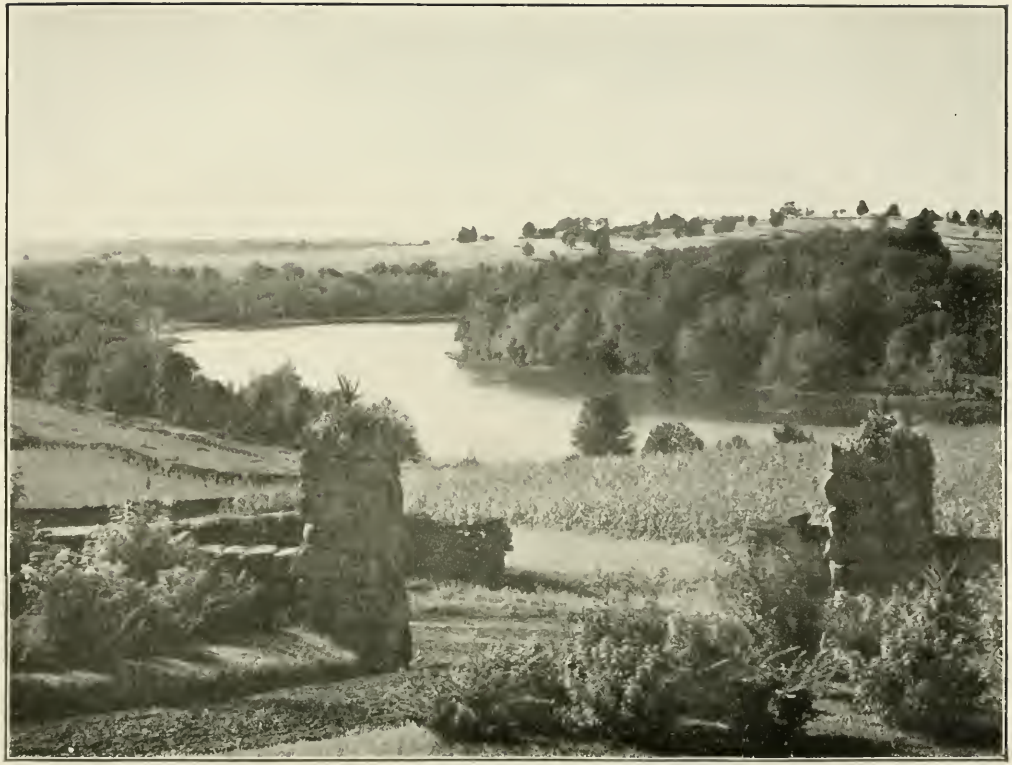

Illustration No. 42*a*—See Paragraph No. 396

from the sky in making the exposure. There are numerous ways of effecting this. One is to employ the focusing cloth in place of the shutter, raising it quickly in front of the lens to make the exposure and then lowering it slowly to cut off the light from the sky while still exposing the foreground. It is possible to use the lens cap in a similar manner; the exposure being made by treating the top edge of the cap as a pivot and raising it slowly from the bottom, in this way covering the upper portion of the lens while making the exposure. There is a shutter on the market known as the Sky-Shade Shutter, which works automatically, giving the sky much less exposure than the foreground, and results secured with this shutter prove very satisfactory. (See Illustration No. 43.)

398. The ray filter described in Paragraphs 182-196 of this volume can also be used to secure cloud and landscape on one negative. As the ray filter absorbs the blue rays, to a great extent, the foreground secures proper exposure without over-exposing the sky.

399. **Selection of Clouds.**—If it is your intention to make a series of cloud negatives to "print-in" with the foregrounds of other negatives, you must make a very careful selection and secure cloud effects that will harmonize with the foreground subject. Clouds that typically belong to seascapes would be entirely out of place when the foreground represents a mountain scene, for instance. The importance of clouds will be well understood when you stop to consider that white paper can never truly represent the sky portion of any landscape or other out-door subject. There was a time when many amateurs would have one stock cloud negative and use this negative for every subject, but this error is not common now among serious workers.

400. **Cultivating Observation.**—Read the instructions which follow, cultivate your faculty of observation and notice carefully at different hours during the day the various lightings on the clouds. Whenever you have an opportunity to observe cloud effects, do not fail to carefully note the difference between clouds in one class of landscapes and

those which go with seascapes or other landscapes. Do not forget that different climatic conditions have much to do with the forms of clouds. Heavy storm clouds should *not* be employed with scenes representing a bright sunny day.

401. **Fair Weather Clouds.**—In fair weather the clouds have a very delicate thread-like appearance and settle at a great elevation, sometimes resembling mere smears of white in a clear blue sky. At times these streaks are parallel, sometimes intersected and often may be accompanied by a light breeze. Clouds of this type are called Cirrus clouds and most successful results will be secured in photographing them by using orthochromatic plates and ray filter. Cirrus clouds give a most useful variety of negatives, as the direction of light is so faintly indicated that few mistakes are likely to occur when employing them with almost any evenly lighted landscape.

402. A denser form of fair weather cloud which rolls along in strong majestic masses, towering upwards from the horizontal base is called Cumulus cloud. This cloud forms one of the most striking types to employ, as its definite shape is very often useful in composition. Some difficulty, no doubt, will be experienced in securing a satisfactory negative with these clouds on a strongly lighted foreground, for in most cases they are strongly lighted themselves, and unless the direction of light is identically the same in both the sky and foreground, the result of the combination will be extremely bad. Before a rain, the masses of *Cumulus* increase rapidly and become fleecy and irregular in their form.

403. **Wind Clouds.**—*The Stratus* is well indicated by its name, and is the cloud appearing lowest or nearest the horizon. This type of cloud usually precedes bad, foggy weather, but you will find it very effective if you can photograph it properly, especially at sunset.

404. The combination of the Cirrus and the Cumulus clouds form what is termed the Cirro-Cumulus, rounded in shape, appearing in detached horizontal layers. The upper portion of this cloud is some times called "Mare's Tails," and it always indicates a fair amount of wind. This

Illustration No. 42*b*—See Paragraph No. 396

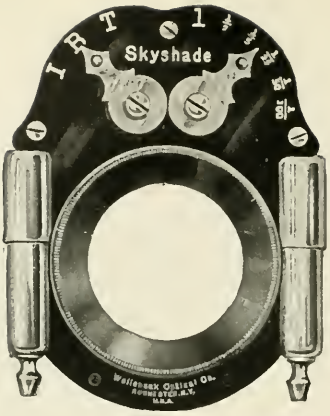


Illustration No. 43
Skyshade Shutter
See Paragraph No. 397

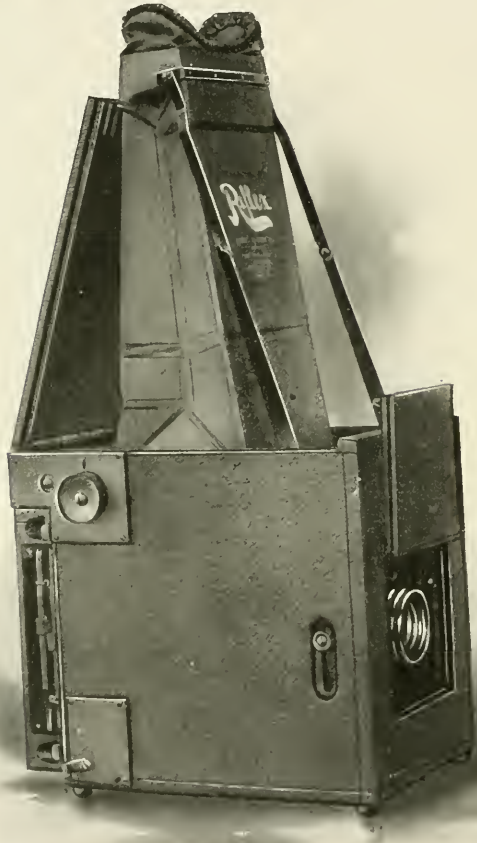


Illustration No. 44
Reflex Camera
See Paragraph No. 460

cloud is generally whiter and much better defined than the Cirrus and is also much easier to photograph, owing to the fact of its being less actinic in color.

405. A combination of the Cumulus and Stratus clouds form the Cumulo-Stratus, which is stronger and denser than the Cumulus. It foretells stormy weather. When the Cumulus cloud thickens rapidly upon the approach of wind and rain it takes on all the characteristics of the Cumulo-Stratus.

406. The *Cirro-Stratus* lies in longitudinal streaks and is usually called the mackerel-back sky. Windy and tempestuous weather is very apt to follow the appearance of this cloud.

407. All of these clouds appear most frequently in conjunction with the blue sky and with the exception of a sun lit Cumulus generally need an orthochromatic plate and ray filter for correct rendering. Cumulus may also need this attention, but the great wooly masses of clouds are sometimes so strongly defined that the use of a screen would effect "over-correction."

408. **Storm Clouds.** — *Cumulo-Stratus and Nimbus Clouds* can usually be secured without employing a ray filter, for they are very often made up of heavy semi-dark tones and such shades of gray that the ordinary plate will photograph them perfectly. Many times, employing color corrected materials for these clouds will result in making them look exaggerated and unreal. The Cumulo-Stratus grows irregularly upward into piles of extremely striking magnificence. A hugh towering mass of heavy clouds rolls up from the horizon in striking form, full of grandeur, over-hanging its base and frequently foretells a thunder storm, especially when covering the sun so that its edges are given the appearance of gold. If striking pictures are desired this cloud provides the finest material for you to employ, but you must exert a certain amount of care, and bear in mind that the climatic conditions which exist at the time the cloud is secured must also have existed when making a landscape or

seascape which is to be used in conjunction with the cloud negative.

409. The *Nimbus Cloud* belongs properly to the sea. It travels and increases in size at a great rate. It is very dense and dark, and is accompanied by rain and sometimes thunder and lightning. It often completely covers the entire sky with a dark mass that possesses no pictorial beauty, yet serves as a most effective background for storm seascapes. When the cloud is forming, or as it is dispersing, pictures of great beauty may be obtained; especially is this possible when the cloud has burst and the broken parts which are very dark at the edges, form into loose and jagged shapes. These broken and rapidly flying parts are called by sailors, "scud," and are the proper clouds for any picture representing very stormy weather.

410. From these different varieties of clouds you will observe that they arrange themselves into three distinct groups—*fair weather clouds, wind clouds and storm clouds.* If you will give careful study to the landscape or seascape into which you desire to print clouds, you will be able to obtain artistic and true-to-nature pictures. Three cloud negatives will answer the purpose for ordinary use. You should have one representative cloud negative of fair weather clouds, one of wind clouds, and another of storm clouds. These will be lighted, of course, from one particular side, yet if you wish to employ them with a landscape which is lighted in the opposite direction, you can reverse the cloud negative in the printing frame so that the film side is facing out instead of being in contact with the paper. A slight diffusion will result, but it will be practically unnoticeable, and not at all objectionable. In this way you have practically six cloud negatives—a sufficient number for the average worker. If you will watch the various transformations, especially in the higher clouds, you will see that the change is extremely rapid. Take, for instance, Cirro-Cumulus clouds and watch them for a few minutes; or even make a series of six or eight pictures at intervals of a couple of minutes. This will show very clearly the process by which

the change takes place, and will prove of great interest and value to you. Storm clouds of any character should be similarly studied, in order that you may understand more perfectly the correct cloud effects to use in conjunction with various foregrounds.

411. **Exposure to Obtain Cloud Negatives.**—In securing these cloud negatives separately, so that you may print them over landscapes or seascapes that require their assistance, attention need only be paid to the actinic quality of the sky, which can be taken as about ten times that of the landscape. Taking for granted that the exposure for the average landscape subject, when the sun is shining and you are using an F. 8 stop is 1-50 second, the sky alone will be fully exposed with 1-500 second. If your shutter's highest speed is but 1-100 second, you can use a five times screen and then obtain a fully-timed negative; but, should you not possess the screen you can obtain almost the same effect by using F. 16 stop, instead of F. 8, and no screen.

412. You can rely upon this being a practical rule; that, *using a certain plate, stop and exposure for obtaining a fully exposed negative of a landscape subject, a five or ten time screen can be advantageously employed for photographing sky alone.* With the exception of certain clouds of the aforementioned Cirrus type, the form and lighting of every cloud should be in accord with the lighting of the landscape.

413. If the lighting of the landscape is not marked and strong, the lighting of the cloud should not, as a rule, be so strong. There are times when you will really see brilliant clouds in conjunction with a landscape in deep shadow, but this is not absolute proof that you should always follow out this idea in your selection of cloud negatives to print with foregrounds. The aim is to take advantage of Nature at her best, when she presents her most pleasing aspect.

414. **Where to Photograph Clouds.**—Although the seaside or other places where an uninterrupted view of the horizon is to be obtained usually present the best opportunities for securing cloud negatives, no lack of material will be found inland. In most cities it is possible from vari-

ous points, to obtain a fairly clear view of the sky, unobstructed by chimneys, telegraph poles or wires. It makes little difference whether the point from which you make the exposure is on the top of a high building or on the outskirts of the town. All depends upon circumstances.

415. **The Horizon.**—A portion of the horizon should always be included in the base of a cloud picture. If the horizon is hidden, a small portion of tree tops or house tops should be retained, but in no case should cloud negatives be taken if it is necessary to point the camera up to any extent. The clouds seen on the horizon are very different in form to those at the zenith, which latter are quite unsuitable for printing-in purposes. The perspective of cloud forms is very marked if the masses are distinctly outlined, and this you must bear in mind when adding a sky to a landscape.

416. The horizon of the cloud negative should come as nearly as possible to the same point in the picture as the horizon of the landscape. In this way only will you be able to secure perfect perspective of the sky. It is also very important to use a lens of the same focal length as the one employed in making the landscape negative.

417. When making the prints the same relative depth must be given both sky and foreground.

418. **Practice Work.**—After having become fairly familiar with the various types and forms of clouds, make an exposure or two of the best subjects at your command. It may be necessary to watch carefully for a number of days before you are able to obtain any great variety of negatives. In developing sky negatives do not carry them as far as ordinary negatives; they must be crisp and snappy, but not dense.

419. Make good proof prints from each experiment, and place your notations, which will give you full information regarding the manner in which you proceed to secure the results, on the back, and file them in your proof file for future guidance.

SNOW SCENE

STUDY No. 18—See Page 312

BY W. A. WILSON

STREET SCENE — WINTER

By John S. Neary

Study No. 19—See Page 312

## CHAPTER XIV.

### SNOW AND FROST PHOTOGRAPHY.

420. Every season of the year has its own special features that invite the camerist to work with his instrument. But the winter season is specially inviting because of the subtle charm of the winter landscape. Nobody who has not seen the hills in winter knows their real beauty and impressiveness. There is a charm and grandeur about them, when draped with snow, that must be seen to be appreciated. The valleys, too, have a weird attractiveness when buried beneath the snow drifts. The rocks and cliffs stand out boldly against the white background of the fields, while the mountain streams show an inky black flowing between the banks of snow.

421. The absence of color, perhaps, makes it possible to reproduce these winter landscapes more correctly with the camera than by any other method. But the great difficulty which arises is, how best to shun too great extremes of black and white in the picture. There should be gradations of tone. The blackness of the water should contain a suggestion of transparency, not a solid black, while the trees and rocks, though gray and really lighter in tone than the water, should give an impression of solidity. In brief, the picturing of snow is one of the most difficult feats of photography.

422. **Snow and Frost Subjects** afford a wide field of photographic work and are deserving of much more recognition than they usually receive. In the first place, the most striking results will be obtained when the snow scenes are taken in sunshine, and when possible the exposure should be made in the forenoon before 9:30 and in the afternoon

after 2 o'clock, on account of the better light and longer shadows which prevail at these times.

423. **Pay Strict Attention** and notice the difference between sunlit snow scenes and those devoid of this important factor. The shadows also often play a very important part, from a pictorial standpoint. A delicate shadow-form will sometimes break up a most uninteresting foreground and prove to be a very important feature in the composition.

424. **Subject Material.**—It is needless to say that work of this class must be done in the winter season, and you should always be prepared for snow and hoar-frost pictures. The scenes come so quickly and are gone so soon, that no time is left to go to the dealers for plates, or to clean up a camera that has been idle for some months. Your plate holders should always be loaded with plates, and if kept in the carrying case, or in any other safe place, you will find that they will remain in good condition for two or three months. The risk is small and the advantage of having your outfit always ready is great. Not only snow, frost and mist pictures are worthy of being photographed, but when the thaw comes, with the wet, sloppy roads and stormy skies, you will have subject material that deserves any amount of careful consideration.

425. **A Country Road on an Early Morning.**—After a heavy hoar-frost has settled on the trees, shrubbery and fences, they present an exceptionally valuable and interesting subject from an artistic standpoint.

426. If you have, up to the present time, done very little at winter photography, many surprises are in store for you. Subjects which in summer are almost hopeless, will be found to provide telling pictures when clad in their winter garments. Take for instance, an ordinary hedge with a common field gate, covered with frost and snow, and open the gate at a picturesque angle. A simple subject like this in sunshine, or better still with a good winter sky, will often make quite an effective study. Each blade of grass is covered with soft white powder, and every bush is transfigured by it. Then, again, you will find excellent material in white

trees standing as sentinels over white fields; white woods standing on the breast of snow-clad hills; a rough roadway after a light fall of snow also presents a very attractive appearance (in such a subject make good use of the wheel ruts); reed-grown banks on ponds and streams; pastures with cattle and trees; snowdrifts in sunshine, and the hundreds of similar objects which will suggest themselves after you have made a few trips at the right time.

427. **Cultivate Observation.**—Before attempting to photograph subjects of this class, study them at other seasons and note their characteristics. The knowledge thus gained will help you materially in your work, and also aid you to secure results with greater dispatch and comfort when the proper moment arrives.

428. **The Camera.**—A hand camera is perhaps the most serviceable instrument for securing snow pictures, because of its lightness and portability. It will also be found convenient for long winter tramps over the open country.

429. A waterproof focusing cloth affords the needful protection against weather conditions. Even with this equipment the practice of snow photography is difficult. The difficulty lies in the great contrasts which, as just stated, exist between the brilliant snow and the dark objects of the landscape. The same procedure should be adopted as in other cases of strong contrast—the use of specially prepared plates and proper development. Non-halation or backed plates should be used.

430. **Exposure.**—The greatest of care must be exercised that you do not over-expose when making snow pictures. The white snow reflects the strong light and the whole scene is of practically an even tone, and if the plate is at all over-exposed it will be extremely flat. If anything, you should err on the side of under-exposure. With a F. 16 stop and an ordinary rapid plate or film, 1-100 of a second will be a great sufficiency of exposure. If the light is very diffused it may be permissible to use an exposure of 1-50 of a second; but even in diffused light there are so many cross reflections and the whole scene will be so evenly illuminated, that

it will be a very easy matter to misjudge the correct amount of exposure necessary. Usually one-half the exposure of a scene without snow is sufficient for one with snow. For example, if you would give 1-50th of a second without snow, 1-100 would be approximately correct for the same scene with snow.

431. **Lens Shade.**—Some times reflections from the snow, difficult to avoid, will be cast into the lens. To overcome them make a cone of black cardboard and fit it around the lens. The cone must not be long enough to interfere with the angle of view of the lens, yet should cut off the direct reflection from the snow that would otherwise come into the lens. Holding the slide of your plate holder or any black object under the lens will prevent reflected light from striking it. Reflections will not always occur, much depending on the angle of light into the view. The reflection can, of course, be detected on the ground-glass when focusing. (See Illustration 48*a*, Page 232.)

432. **Advantage of the Ray Filter.**—The sensitive plate is always affected by the strongest lights, whether reflected or direct; and, in consequence, the more subdued lights are very hazy and misty in the shadows. The best way to overcome this haze and mist is to give quick exposures and to use a ray filter.

433. A strong sunlight on the white snow, especially where the sun faces the instrument, will have the same effect upon the lens and plate as it would upon the human eye when looking at the snow with the sun shining upon it. In the latter case the eyes are weakened and almost blinded by the dazzling whiteness.

434. **Lens vs. Human Eye.**—*If you were looking at some distant object across a field of snow* it would be almost impossible to see it, and the longer you looked the less you would be able to see. This is exactly what happens to the lens and sensitive plates. The longer the exposure, under the above conditions, the less the lens will see, which results in your obtaining very little detail on your sensitive plate. Like the human eye the plate will have fogged over and the image

appear veiled. When you first looked at the snow your vision was perfectly clear and you could see all of the detail. Now, transferring this example to the "seeing power" of the lens, you can realize why the short exposure on your plate will give the best results, rendering plenty of detail, while a longer exposure will produce fog.

435. **By the Use of a Ray Filter** (which has been previously described) the activity of this curtain of strong light —the reflection of sun on the snow—will be reduced enough to give a good rendering of the highlights in the negative and secure sufficient detail in the shadows. Thus the ray filter acts on the lens like smoked or blue glass upon the eye. The blue glass prevents the yellow rays of light from affecting the eyes, enabling one to see distinctly the various objects which are situated on the glaring snow. When the ray filter is used on the lens it keeps the chemical rays of light from acting in a similar manner on the sensitive plate, and little or no fog will result.

436. **Color of Ray Filter.**—The color of the ray filter should be light amber. Using the ray filter you can give a slightly longer exposure, preserving the detail in the foreground, and at the same time securing detail in the shadows.

437. There are many good, inexpensive ray filters on the market, which you can secure from any stockhouse dealing in photo supplies. When ordering a ray filter be sure to give the exact size of your lens barrel.

438. **Development of Snow Negatives.**—In making snow negatives one should aim to reproduce the original as truthfully as possible. As snow is white, it will be necessary that the negative be sufficiently dense to retard the rays of light and have the portions which represent snow in the picture only slightly tinted. Do not infer from this that the highlights should be void of detail. The delicate half-tones which exist in the snow scene must be reproduced. This, however, is dependent to a certain extent upon the correct judgment of exposure. If too much exposure has been given the delicate half-tones will have been over-exposed and unless the amount of over-exposure was known

in advance it would be difficult to rectify this in development. It is necessary to secure a fairly strong negative, the highest point of light being quite dense; remembering, of course, not to carry the development so far as to destroy the relative values of the delicate half-tones in the highlights.

439. The formula for the Universal Developer as given in Volume II should be used for this class of work. Be very careful of the temperature, remembering that the best chemical action takes place at 65 degrees Fahr. Never develop plates when they are chilled and cold, as they will develop flat and be even poorer than a greatly over-timed exposure.

440 **Printing.**—The finished negative must be one that will produce texture of the snow, allowing the shadows to be transparent but not black, heavy masses. Above all, the snow must be luminous snow, and not a dirty, uncertain mass. If you preserve the texture of the snow the whiteness will be soft, but not the hard, blank white so often seen in pictures that are supposed to represent the natural quality of snow.

441. Snow pictures look exceptionally well on platinotype paper, as it renders a rich and realistic effect that is somewhat difficult to obtain on printing-out papers. If you are familiar with the carbon process, unsurpassed results can be secured by printing upon Engraving Black or Blue Black. If bromide enlarging is resorted to, you must be sure to use a developer that will give a rich black without clogging up the shadows, and for this you will find metol an excellent agent.

442. **Practice Work.**—Should you have an opportunity to photograph snow scenes, apply this instruction and make several negatives, slightly varying the exposure of each and develop one plate at a time, as the first plate developed provides you a key for the developing of the remainder.

443. Make good proof prints from each experiment and place notations on the back of the print covering full information regarding the exposure and development, as well as the manner in which you proceeded to secure the results, and file in your proof file for future guidance.

THE DREARY ROAD

STUDY No. 20—See Page 313

BY C. F. CLARK

DEPARTING DAY

Study No. 21—See Page 311

By Geo. H. Scheer, M. D.

# CHAPTER XV.

## DIFFICULTIES—CLOUD, SNOW AND FROST PHOTOGRAPHY.

444. **Flat Cloud Effects.**—Flat cloud effects are invariably due to over-exposure. When it is desired to secure the landscape on the same negative with the sky, the light from the clouds, which strikes the sensitive plate, must be retarded sufficiently to allow enough exposure to bring detail out of the landscape. To produce strong cloud effects, with depth and roundness, employ color corrected materials, as directed in Chapter XIII. A careful study of this chapter will enable you to secure the very best results possible to obtain.

445. **Difficulty in Photographing Clouds.**—The greatest difficulty in securing the right kind of cloud negatives will be your inability to obtain the proper subjects at the right time. Therefore, you should always be on the lookout for various cloud effects, and even if you have no particular use for the cloud at the time, you should make one or more negatives of it, so that you may have it on hand to use whenever you desire it.

446. In making regular cloud negatives select a place where you can secure a clear view of the horizon, unobstructed by telephone poles, trees, houses, etc. The seashore is the best place for photographing clouds; but from house-tops, or even from open fields in the country, you can secure the proper results. We would again urge the importance of giving short exposure. Over-exposure always flattens the effect, and in cloud photography, especially, there is great danger of ruining an otherwise pleasing cloud effect.

447. **Moisture Gathering on Lens.**—If the lens is taken from a warm room into the cold air, moisture will form on its surface. In this condition no exposure should be made, as the resulting negative will be under-exposed and appear very foggy. It may be necessary to wipe this moisture off perhaps two or three times, or until the temperature of the lens becomes the same as the atmosphere. In a short time, the moisture will not gather and you may then proceed to make the exposure. In wiping the lens always use a soft cloth—one which will not scratch the surface of the lens.

448. **Focusing Snow Scenes**—(a) If difficulty is experienced in focusing and securing sharp image on the ground-glass, the trouble will invariably be due to a strong reflected light which strikes the

lens and gives a hazy, foggy image on the ground-glass. The lens must be shielded in some way. Usually, holding the slide of the plate holder or any other dark object of a similar nature under the lens, will cut off the reflected light from the snow and allow of a sharp image being formed on the ground-glass. A conical-shaped hood may be placed over the lens as described in Paragraph 431. In fact when making snow scenes, it would be advisable to always employ a hood of this kind, as you will almost invariably experience difficulty from cross reflections and reflected light from the sun. (b) If the lens is pointed directly towards the sun, it will be impossible to secure a sharp image on the ground-glass. Especially when making snow scenes you should aim to have the sunlight fall from the side but not towards the lens. Light coming from the side will invariably do away with any serious amount of reflected light and you will be able to focus without any trouble whatsoever.

449. **Flat Snow Negatives.**—Flat snow negatives will invariably be due to over-exposure. A minimum amount of exposure should be given as this is one instance where you should err on the side of under, rather than over-exposure, for it is not at all difficult to secure detail even in the deepest shadows when photographing snow scenes. Less than half the exposure is necessary to secure a snow negative full of detail than is required for producing the same amount of detail when there is no snow on the ground. Care must be also exercised when developing snow negatives that the developer is not too weak, for in this condition it would bring out detail rather than produce density and in order that a correct rendering of the snow scene be secured, it is absolutely necessary that the highlights be strong, yet full of detail. A normal developer is usually the best to employ.

450. **Lighting.**—The lighting has much to do with relief, roundness and atmospheric effect. If the sunlight falls perpendicularly upon the scene as is the case during the noon hours, you will not secure the valuable shadows which add greatly to the effect of roundness and secure the necessary contrast which you must have in the snow scene to make it appear real. The best time of day to make an exposure is in early morning or late afternoon when the shadows are longest. At either of these times there is not as great a danger of over-exposure as at noon, when the sun is strong and the light falls almost perpendicularly, thus giving practically no shadows and a flat picture.

451. **Snow Appears Dirty.**—This will be the result if you have over-exposed and under-developed your negative. There must be contrast between highlights and shadows and there must also be detail in the shadows, but the highlights should be developed sufficiently strong so the negative in these portions will be almost opaque, thus retarding the action of the light on the sensitive plate.

452. **Highlights Appear Hard With no Detail.**—This is caused by over-development as well as by slight over-exposure; or perhaps too strong a developer. A correctly developed negative should be carried in the developer until the highest points of light are practically opaque, but the delicate half-tones in these highlights should be preserved. This is accomplished by careful development and will only result when proper judgment is exercised in stopping the action of the developer at the right time. A snow negative should be soft and delicate. In fact strive to reproduce exactly what you saw in the original. To be successful you must give particular attention to the exposure and then be able to develop the negative to exactly the proper density. Always use a normal developer and when the image first appears, if it shows signs of too much contrast, dilute with water. If the plate appears flat, add a few drops of bromide and conclude the development.

## CHAPTER XVI.

### Part I.

### SEASCAPE PHOTOGRAPHY.

453. The majority of the camera users at the seaside can be divided into three different classes. We do not include tintype photographers, but simply consider amateur photographers, who are usually visitors, enjoying a holiday at the *seashore*.

454. In the first place, there is the amateur who carries a camera because it is the fashion. He generally favors a small size and the type of kodak which will fold into small space. If the camera or kodak needs but the pressing of a button to secure the exposure, and has no focusing mechanism or appliances to attend to, he is more than satisfied; being quite content to occasionally point the instrument in the direction of a distant yacht or a group of young lady excursionists, "just for the fun of the thing."

455. The second type is the enthusiastic snap-shotter, who may be termed the "plate-maker's friend." At the seaside he uses more plates in a week than he cares to think about in calmer moments, later on. While he is in the field he will shoot away at probably anything in sight, counting himself fortunate to secure even one or two good pictorial negatives. As a rule, you will see him rushing back to his hotel, or to the local dealer's dark-room, to load up his plate holders or magazine for the second or third time during the day. If he employs films, his pockets will bulge out with spools, with which he is well supplied. This class of amateur conscientiously develops every photograph he takes, and

later makes postcards from the negatives, to send to friends who have not been so fortunate as to have enjoyed a vacation. True, some good pictures will be secured and his work may prove to be sufficiently good to make his non-photographic friends envious, or sufficiently bad to make his contemporaries endeavor to produce something better.

456. To the third class belongs the serious worker, who sets about the picture making business in earnest. He regards each snap of his shutter with the satisfied air of the fisherman who has just landed a fine specimen of trout. He makes a box of plates or a spool of film last an entire holiday, but secures something good with each exposure.

457. Quite closely related to this worker is another, who, although equally careful and thoughtful of details, is bound in fetters of conventionalism that render him helpless without an exposure meter. His pockets bulge with note books and tables, and exposures are calculated with the same precision that he employs in weighing out hypo, or pyro. He permits no room for error, and is emphatic in reasoning. In fact nothing can be done approximately—everything must be *just so.* In the end, no one sees his results.

458. **The Camera.**—For holiday work the view camera and tripod are not much in favor at the seaside, for many reasons. Aside from the fact that seaside work will probably include pictorial material with a certain amount of motion, the light is so actinic, during the summer, that snapshot exposures used with a slow plate are almost always a necessity. Beyond the occasional opportunity for composing a picture on the focusing screen, there is very little need for using a camera on the tripod at all.

459. **Handling the Tripod.**—If, however, a tripod is employed on any occasion, care should be taken to see that the points of the legs are on a firm base. If the tripod is erected on wet sand, it will very often be found that between the periods of focusing and making the exposure, the camera has sunk an inch or two in one direction, and the negative may therefore be spoiled.

THE WAVE

STUDY No. 22—See Page 313

BY J. R. PETERSON

"ALL ABOARD"

Study No. 23—See Page 313

By Wm. T. Knox

460. **Reflex Camera.**—The very best camera for this class of work is the reflecting type. Beach scenes, children paddling, sea birds, men with carts collecting seaweed, boats putting off from shore, and the hundred and one instances and happenings at a seaside holiday resort can be best rendered by the reflex hand camera, which permits of focusing up to the instant of exposure. (See Illustration No. 44, Page 184.) For other subjects, such as breaking waves or yachting scenes, or any type of work where the lens or camera is likely to be splashed with spray, the reflex camera is not so suitable, as the lens is left uncovered during the entire period.

461. **The Lens.**—The lens suitable for all around work at the seaside, during the summer season, need not be an expensive anastigmat, although this type of lens will give the finest results, especially if enlargements are to be made from the negatives. The ordinary rapid rectilinear lens, or even a good single lens, will, in most cases, serve excellently for seaside subjects. The reason is, that considerable stopping down is allowable, owing to the intensity of the light. The lack of covering power that might exist at full aperture is, therefore, corrected.

462. **The Diaphragm.**—F. 16 is a normal diaphragm to use for beach scenes or seascapes, and with a rapid orthochromatic plate fully exposed negatives should be secured at 1-100th second. The lens to be used is one that will permit of exactness of definition all over the plate. At a large aperture a light color screen can be employed to advantage, and cloud effects are secured on the same plate with the foreground.

463. **The Plates.**—Orthochromatic plates are now made of such rapidity and fine quality that there is no excuse for not using them under all circumstances. For seaside work they are better if backed. The glare of light in open seascapes is often responsible for a considerable amount of halation produced with an unbacked or ordinary plate.

464. Films, of course, are very useful. If the photographer makes many exposures the weight is a serious item,

and cut or roll films should certainly be used. They are also made orthochromatic and possess practically all the virtues of plates, with the added advantage of lightness, as well as being non-halation.

465. **Focusing Scale.**—Another point worthy of attention by the earnest hand camera user, especially if the camera is a new one, is to carefully test the focusing scale before starting on the holiday. Bear in mind that the brilliant light of the seashore is very misleading in judging distance, and if the snap-shotting of groups or objects on the seashore is attempted, the preliminary test will not only be useful for the sake of the camera, but will greatly aid in training the eye.

466. **Selecting Subject Material.**—The best subjects to photograph must be left to the individual taste, but we would urge upon you not to waste plates and material on the common things which you are able to purchase as souvenir postcards in any of the news stands. It is well to aim at something that will please you for more than the time being. Don't be afraid of waiting half an hour, or even two or three hours, for a suitable figure to come along just to fill the space. Study the different effects of lighting at the various hours of the day; notice the difference in the effect of the morning, noon and evening shadows. If you are in some fishing village look out for quaint corners and odd appearing houses. If the sea is calm and the local fishing vessels show broad reflections, take a boat and go out and photograph them from the level of the water. There are also scores of figure studies which will be available by watching and waiting. Always take particular pains to see that the groupings and the composition arrangement are the best possible. Be careful, for instance, to avoid including others than the fishermen in the view.

467. **Figure Studies.**—In figure studies a good distance to stand away will be about 15 feet. This is near enough, as a rule, to get the whole of the figure on the plate, and far enough away to make the exposure before the individual is conscious of what you are doing. The subject should never

OYSTER BOAT

STUDY No. 24—See Page 313 BY DR. A. R. BENEDICT

SUNSET CLOUDS OVER BAY

STUDY NO. 25 — BY S. I. CARPENTER

appear to be looking at the camera, but should be interested in some feature of the scene. If you are not sure of your distance, always err on the side of getting the focus at a point nearer than you estimated the distance to be. This will insure your figure being sharp and will agreeably diffuse the distance.

468. **Estimating Distances.**—As an example: With a lens of 6 inch focus, suppose you estimate the distance of the main object at 24 feet using stop F. 8; then everything from 14½ feet to 66 feet will be in focus. Now, supposing you think the object is 24 feet away, but you are not sure of it; then, if you set the pointer at say 18 feet, everything from 12 to 34 feet will be in focus, and if the object really was 24 feet away there would be still 10 feet beyond that point that would be in focus, a result that is very desirable in almost every case.

469. **Photographing the Sea.**—If you have never had any previous experience of seascape work, you will at first be somewhat disturbed by the "largeness" of your subject. It is very likely that the expanse of ocean, or even of the beach, will strike you at first either as uninteresting or else an impossibility. The latter decision will be arrived at after you have developed your first seascape negatives. What has become of the tumbling waves and the turning rollers that appeared so big and fine to the eye? Surely those little ripples in the foreground of the negative are not they, and that straight, hard line of the horizon, cutting the picture in two, was not there.

470. You will find in this work, that you are contending with an entirely different proposition in sea photography than you have been accustomed to in landscape work. It will be necessary for you to exercise a greater amount of time in selection, in order that pleasing and striking seascapes may be obtained.

471. The every-day snap-shotter will find at the seaside less actual material with which to work than he will meet inland. But, while stretches of wet glistening sand and reflections are capable of the highest pictorial treatment,

they require a great amount of maneuvering to secure the best point of view for pleasing composition.

472. **Point of Interest.**—Pleasing and striking effects depend often upon a well placed mass of seaweed, some broken piles, or even the reflection of a gleam of light, in conjunction with striking cloud forms that are usually to be seen in profusion during the summer season. If the sea itself is photographed alone, and rocks, piles, fishing boats, sailing yachts, etc., do not enter into the picture to form a point of interest, prominent breaking wave-crests can be watched for and utilized as the principal point, especially if you will hold your camera low so as to bring the wave above the horizon line. In many cases, however, a perfectly calm sea, rippling in over a stretch of seashore, combined with fine cloud effects, will provide materials for a very complete and satisfactory picture.

473. **Fine vs. Stormy Days.**—The instruction we have just given applies more particularly to beautiful days, and the work may be attempted by any one spending his holiday, with a camera, at the seaside towns which boast of a promenade, beach, pier, etc.

474. Perhaps you belong to a class of photographic enthusiasts who seek wilder scenery, or you are favored with a gale or a stormy day during your visit. If this is the case, make the most of your opportunity and catch the sea when in its tempestuous mood.

475. If the coast is rocky and the sea dashes in on the rocks, a safe position should be selected so that a drenching can be avoided by an immediate retreat, and a most likely setting for a picture selected. The incoming waves should be watched very carefully and you will soon be able to gauge where each will break. Compose the picture beforehand and have the camera all ready for exposure at the next inrush of sea. When it appears, experience gained by watching will determine the moment for exposure,—say, when the dashing spray is at its highest.

476. **Lighting.**—The position of the source of light is an important factor in the success of seascapes. When sun-

MARINE

Study No. 26

By S. I. Carpenter

BOATS NEAR VENICE

By Wm. H. Phillips

Study No. 27—See Page 314

sets and strong cloud effects are desired, the water usually plays a secondary part. Seascapes looking directly at the sun are very rarely successful. In order that they may be effective, waves, big or little, require just as much careful lighting as any landscape or figure subject.

477. **Background.**—The question of background is of much importance. By background we mean the general tone of the sky that backs up the seascape. A very light or blue clouded sky is usually unsatisfactory for seascapes. The water is devoid of tone and the spray is invisible when it rises above the skyline. During the springtime, however, you will find that both heavy cloud forms and rugged seas are to be seen anywhere along the coast, and a combination of these should be secured, either together or separately, and later combined in the finished print.

478. **Exposures.**—The light at the seaside from spring until late autumn is extremely bright, and you must exercise the greatest amount of care not to over-expose. Use the fastest speed at which your shutter is capable of working, unless you are employing a focal-plane shutter, or a shutter that will render exposures less than 1-150 of a second. The reason why seascapes require such a brief exposure—which is fully one-half that required for landscapes—is because much of the light coming from the sky is reflected by the water, which acts as a mirror. In addition to this the air is much more clear and pure, and the actinic quality of the light is not impaired by smoke or fog that reduces the normal light of towns so considerably.

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Part II.

## PHOTOGRAPHING SEA BIRDS.

479. Especially during the late summer and fall, the camera user with a love for nature and natural history will find photographing sea birds a most fascinating branch of photography. If you have never tried it, you can under-

stand nothing of the great amount of interest that is to be found in this pursuit, to say nothing of the health-giving and invigorating exercise which necessarily accompanies it.

480. In the first place, you will have to leave the seashore resort for that section of the coast seldom frequented by humanity. The lonely, but at the same time most interesting, districts along the cliffs and rocky coasts are where abounds your subject material, the birds.

481. **Outfit for Photographing Sea Birds.**—It is not necessary to have special apparatus, although the telephoto lens, electric shutter, and various other appliances will come in very handy. The outfit possessed by the average amateur will answer every purpose for securing fairly good results. The first and most important item is to make yourself acquainted with the habits of the birds. The time spent in this study will not be wasted, nor will it be tiresome, even if you devote an entire season to it and do not expose a single plate. Make a point of ascertaining all you can about each variety of bird, its habits, its mode of feeding, and particularly the way and time it feeds its young. When you have obtained this knowledge you will be in possession of the most essential part of your equipment.

482. Careful stalking is another important item. Too much care cannot be taken in approaching any wild bird, more particularly those of a shy nature. As the bird's sense of hearing is most acute, be very careful and make just as little noise as possible. Don't smoke, don't hurry and above all, don't show your head. If you are using a hand camera, keep it, as much as possible, between your head and the bird.

483. Successful stalking is not always a very pleasant occupation. It frequently necessitates a long, tedious amount of crawling on the ground—snakelike—and many times over extremely uneven surfaces, but a good picture at from 6 to 12 feet compensates for the discomfort entailed.

484. **Tripod Camera.**—When working with a view camera it is well to keep the head under the focusing cloth, using the slit between the baseboard of the camera and

ground-glass as a peep-hole. Care must be taken, however, when approaching the flock of birds in this manner that the tripod legs do not cause your downfall. It goes without saying, that a stumble under such conditions is most fatal to success, as it is almost sure to frighten a bird within 150 feet and perhaps endanger a whole day's work.

485. **Practical Details.**—A 4 x 5 camera, or even a 3¼ x 4¼ instrument, is of good size to use on a bird stalking expedition, and the common, rapid rectilinear lens stopped to F. 8 or F. 11, with the shutter working at about 1-25th of a second and the ordinary plate, will render good, satisfactory results.

486. **Exposure.**—It is very essential that you give full exposure, especially if the birds have some black about them. The razor-bill, a dull or a sooty-black, requires somewhat excessive exposure to insure any detail. At the same time the strong actinic power of light on the coast must not be forgotten.

487. **Focusing Cloth.**—You will find a large home-made focusing cloth to be of great advantage when stalking birds; and especially so if you are using a tripod camera, as it will protect you and the instrument from view, and will give you an opportunity of gradually working up toward your subjects without their being aware of your approach. Before your subjects arrange themselves in just the position you would like to have them, you might be required to wait for some little time, so it is advisable to be well protected from their sight.

488. The time of making exposures must be left, of course, to the individual worker. It is necessary—in fact each subject requires it—to exercise your own judgment in all work of this class.

489. **Practice Work.**—Suppose you are ready to make an exposure on a seascape subject. Aim to secure a typical scene, including in the angle of view not only the sea and sky, but have the picture space covered about one-third with a part of the shore. Introduce into this scene a figure on the left-hand side and a little below the center line of the

picture space. For instance, have a little child, with pail and spade, digging in the sand, blissfully unconscious of your presence. The horizon line (the line formed by the meeting of the sea and sky) should, in this case, be above the center of the picture space, and the camera should be placed not higher than 2 feet above the ground.

490. If possible, try to make the exposure at a time when the sea is a trifle rough, and at the instant of exposure have a white cap break into spray, so as to destroy the straight line of the horizon. Remember that the required exposure, providing the sun is shining, will be no greater than 1-100 of a second, using a stop F. 16. Try to have the sun on the left-hand side of the camera. Then the shadow, which will be cast by the figure, will fall in a manner to carry the eye from the object into the picture, when observing the finished print. If the sun shines from the right-hand side, casting a shadow to the rear of your subject, the eye would be led from the subject to the shadow, and from there out of the picture. This would not only be against the rules of composition, but would also greatly detract from its value. Be sure that your subject faces toward the center and not away from it.

491. When you have to your satisfaction arranged your subject material, make an exposure of the scene; then select another view, carrying out some one of the ideas suggested in Paragraph 466. Develop both negatives and make a print from each experiment. Place your notations, which will give you full information regarding the manner in which you proceeded to secure the results, on the back of prints, filing them in the proof file for future guidance.

# CHAPTER XVII.

## DIFFICULTIES—SEASCAPE PHOTOGRAPHY.

492. **Flat Seascapes.**—In making negatives of any subject, flat effects are more or less due to over-exposure. In seascape photography, however, the tendency to over-expose is far greater than in ordinary landscape work. The amount of exposure required for seascapes is practically the same as that for snow scenes. The air at the seaside is clear and absolutely devoid of the smoke and dust so prevalent inland, while the reflections and direct light from sea and sky greatly increase the actinic quality of the rays of light that pass through the lens and affect the sensitive plate.

493. **Plate Fogging in Holders.**—If plate holders are employed, do not expose them unnecessarily to the direct rays of the sun, as no loaded plate-holder is capable of withstanding prolonged exposure to a summer sun without injury to the plates. It is always advisable to cover the plate-holders and back of camera with the focusing cloth when withdrawing the slide, and in every instance strive to protect the plates as much as possible from direct rays of sunlight. Care must also be exercised in replacing the slide in the holder; be sure to place the whole edge in at the same time, not one corner first.

494. **Objects Out of Focus Where Focusing Scale was Relied Upon.**—If the focusing scale is to be relied upon you must be able to judge distances, or must approximately measure the distance between the subject and the camera. If such distance is perhaps a little less than 100 feet, all objects beyond being practically in universal focus, the pointer can be set at the 100 ft. mark on the scale. As was mentioned in Paragraph 465, you should be sure that the focusing scale is properly located on the camera bed. It is seldom this is not properly placed, but if you desire to test it, focus on an object situated at 10 feet, then on an object at 25 feet, and also one at 50 feet. If the pointer registers properly on the scale in each case, you may know that the focusing scale is a correct guide to go by, providing you have estimated or correctly measured the distance.

495. **Seascapes a Failure from an Artistic Standpoint.**—Should the seascape be uninteresting and lacking in artistic quality, the cause

will be found in the fact that you lack a thorough conception of what is required. Or, you have proceeded to make the exposure with too much haste and have not used proper judgment in selection of subject material. There are possible occasions where you may secure a view entirely at variance with what a painter would consider ideal composition, yet as the view appeals to you individually and contains exactly what you tried for, it may prove a most satisfactory picture to yourself and others advanced in photography.

496. If you have carefully studied the preceding chapters of this volume, you will be able to choose the proper subject material, and also make the right selection of view-point. You must bear in mind that in order to obtain an interesting, artistic picture, it is requisite that you photograph subjects that possess something of human interest. In Paragraphs 466 and 467 are given various suggestions for subject material, which will be of value, and if you carry out the ideas therein presented you should be able to secure results considerably out of the ordinary.

497. **Photographing Sea Birds.**—Here there is danger of failure, because you are dealing with subjects not easily handled. In the first place, you must be a student of nature, and the more knowledge obtained regarding the life and habits of sea birds, the greater will be your reward. Greatest of care must be exercised in stalking, or approaching subjects, for the least stumble or quick movement is very likely to frighten the birds, and perhaps ruin your opportunity for making an exposure that day. A large focusing cloth, as mentioned in Paragraph 487, is most valuable, not only to cover the camera, but yourself. Under its protection you will be able to carefully approach a flock of birds and secure an exposure without great risk of frightening them.

## CHAPTER XVIII.

### NIGHT PHOTOGRAPHY.

498. A field of photographic work that but few amateurs enter, except for the hit or miss exposure, and one in which great possibilities lie, is photography at night. Although exposures at night have not as yet reached the snap-shot stage, they are by no means lengthy, this being due, of course, to the rapid strides made in the manufacture of fast plates and lenses. What the future holds in store for us as regards quick exposures depends largely upon the skill of the lens maker and plate manufacturer. Many photographic workers consider that night photography has few pictorial possibilities, and to a certain extent this is true. Of the thousands of subjects we have by day, perhaps only one may be suitable at night. Then again, night work does not permit of such variety of treatment as the artist is able to produce in daylight. The lighting is so different, highlights and shadows being much more difficult to handle. As the slightest sign of faking is distinctly noticeable upon the negative, it is not possible to remove this, or take out that, and put something else in its place.

499. The aim in night pictures is a correctly exposed and properly developed negative, with the shadows almost clear glass with but a suggestion of detail and the highlights of moderate strength but free from any pronounced halation. When printing from such a negative, whether by contact or by the enlarging process, you may subdue or alter the print to conform with requirements. Although night work may have but few pictorial possibilities, yet it has a charm all its own. Photographing in a large city at night you see what during the day was a busy, noisy street, practically deserted. You find clumps of heavy dark shad-

ows emphasized here and there, where a street lamp throws its reflections over the pavement.

500. If darkness were absolute at night, then photography, except flashlight, might be out of the question. At no season of the year is there any time of night perfectly dark from a photographic point of view. There is ever a certain amount of actinic light energy, even in the open country away from all apparent illumination, where there is not the least suggestion of artificial light. Even on the darkest of nights, when the eyes become accustomed to it, absolute blackness cannot be felt. The fences and trees by the roadside all stand out from the darkness of shadow to the darkness of an inky sky and are discernable. Now, if the eye can discern objects at night, it is obvious that the lens and sensitive photographic plate will do so; and, at the same time, they will record many things that the eye could not see. If objects are discernable in the open country at night, how much more so must they be even on a very dark night in a city, where lights from thousands of different stores brighten up the darkness and are reflected back from the sky, giving a diffused light and picking up the detail in the shadows. Then, on a clear moonlight night, there is a wealth of soft white light that is so highly actinic that even in December it is easy to over-expose and secure a daylight effect.

501. Night photography is dependent then upon the amount of actinic light available at night, and this may be only the 1-25,000 part of that obtainable at mid-day of an open city view. In other words, the 25th of a second with stop F. 11 will become 15 minutes with the same stop at midnight. Yet the pictorial aspect of the work lies, not in the direction of light, but in the proper handling of the shadows. It is soft, mysterious, suggestive shadows, set off by a little light here and there, that appeal to the imagination.

502. **Lightning Flashes.**—For photographing lightning flashes at night, use a quick plate, with the camera set to universal focus, employing the largest stop. Point the camera in

Illustration No. 45—See Paragraph No. 502

Illustration No. 46 THE PLAZA By A. Stieglitz
See Paragraph No. 508
Taken in 1896 with Goerz Dagor No. 2 (F: 6.8) at full aperture. 10 P M. Exposure: 1 minute

the direction of the prevailing flashes and uncap the lens when you expect a flash is likely to occur. Forked lightning only should be photographed. *Sheet lightning* only fogs the plate. As soon as you are certain that a flash has been obtained, cap the lens. For an example of a lightning flash, see Illustration 45.

503. **Illuminations.**—The greatest difficulty in photographing illuminations is to find a place unobstructed by the crowd. Illuminated buildings, such as one sees at exhibitions, make excellent photographs; but there is too much symmetry and over-abundance of design to make them really pictorial. A common mistake in photographing illuminations is over-exposure. Some little detail between the lights is essential. One does not care to see simply row upon row of fairy lamps with nothing in the view to support them. Neither do you want to see these lamps with a large halo surrounding them. Using a rapid plate and stop F. 11, an exposure of not more than 3 minutes should be given and if you are very close to the illumination half this time is sufficient. Each lamp possesses very little actinic quality and taken individually would have little effect upon the photographic plate; but collectively they supply an abundance of illumination.

504. **Conflagrations.**—When a person has the opportunity to photograph a large fire it should be grasped. A quick plate with as large an aperture as possible, will allow of an exposure being made in from 3 to 10 minutes, according to the light, providing the stop be not smaller than F. 8. The color of the illumination produced by the flame being more of the orange or red, is less actinic than electric light. Besides the actual conflagration itself, there are many little bits here and there that may be secured, fire engines for instance.

505. **Iron Foundries, Store Fronts.**—Unless worked in conjunction with a flashlight, interiors of iron foundries and blast furnaces are of very little value as subjects. So much of the light is red or yellow, with more heat than actinic rays, that, to obtain a good photograph, it is necessary to

use a flashlight arranged to allow the shadows to fall with the furnace lights. To throw shadows in the same direction as those cast by the molten metal, as it comes from the furnace, will necessitate the placing of the flash to one side of the furnace, but out of the range of the lens. Distant views are not very interesting, but may be taken in much the same way as ordinary street scenes. Large store fronts, even if well lighted, cannot be said to make artistic pictures; but, looking at it from an advertising point of view, it is surprising more firms do not have their window displays photographed when fully lighted at night. With a rapid plate and F. 16 stop, an exposure of from 5 to 10 minutes will suffice. See paragraph No. 529, Page 237.

506. **Naval Displays.**—Photographing naval displays at night is almost impossible if there is any considerable amount of movement. Heavy seas, rapidly moving craft or high winds completely prevent any chance of making an exposure. For this class of work what is required is that the vessels be anchored and fully illuminated during the exposure. Using a stop F. 11 and a very fast plate, an exposure of at least 10 minutes should be given.

507. **Street Photography.**—This is perhaps the most fascinating form of night photography; a street corner with a little church steeple, or, perhaps, a statue sharply silhouetted against the sky, are good subjects. The exposure will vary from half an hour for a close view with few lights to 15 minutes for an open view, such as a large square, using stop F. 11 and employing a rapid plate.

508. In wet weather the streets and other outdoor places look their best. Lights, exceptionally clear and bright, stand out of the darkness and cast reflections over the pavements (See Illustration 46, "The Plaza"). Under such conditions the exposure may be reduced to 1 minute,—less than would otherwise be given if the streets were dry. Some churches, when well lighted at night, present very pretty pictures, especially if the stained glass windows are well illuminated. This class of night subject is the only one for which the use of rapid orthochromatic plates is

MOONLIGHT ON THE MISSISSIPPI

STUDY NO. 28—See Page 308

BY R. E. WEEKS

Illustration No. 47
A Moonlight Effect
See Paragraph No. 512

recommended. With a stop of F. 11, an exposure of 30 to 40 minutes should be given. In all other classes of night photography the ordinary rapid plate will suffice, as it will be found that instead of orthochromatic plates being quicker at night they are, if anything, slower. Then, again, they have to undergo such prolonged development that there is every risk of either chemical fog or light fog taking place.

509. **Railway Stations at Night.**—A large railway terminus offers ample scope for photographic work, but great care has to be taken to avoid moving lights. Owing to the close proximity of arc lamps, double-coated plates, or backed plates, are an advantage. Exposures may be very quick. With a rapid plate and an aperture of F. 8, a fully exposed negative should be obtained in 2 minutes.

510. **Ship and Harbor Scenes.**—Shipping always lends itself to pictorial treatment, and on a fine clear night very good pictures may be obtained. Exposures are approximately the same as for street work, i. e., with a rapid plate well backed, a lens stopped to F. 11, 5 to 10 minutes' exposure will be required.

511. **Moonlight Effects.**—With a very bright moon exposures at night need not be lengthy. An open view, like a large city square, may be taken in four or five minutes, using stop F. 8 and a rapid plate. An open view in the country, free from artificial lighting, would take from half to three-quarters of an hour. There is no use attempting work in the country at night, except by moonlight. A farm building, a country road with clumps of trees, and perhaps a little cottage set back from the road, or objects of this kind, help to build up very pretty moonlight views.

512. Care must be exercised not to include the moon in the view, as the result will be a long, elliptically-shaped mark across the sky as a result of movement. Almost all night photographs including a moon are faked. (See Illustration 47, "A Moonlight Effect.") The method of their production is to snap-shot against the sun when the sun is partly hidden by clouds, or the sun is very red, and de-

velop the negative up thin. Certainly these faked night pictures are very pretty, but they depend largely upon cloud effects. A red sunset gives better moonlight effects on account of its decreased actinic power. The artificial sources of illumination which are sometimes put in with the brush give a false and very feeble idea of light and shadow.

513. **Photographing the Moon.**—There is a way, however, to include a real moon in the photograph, by simply making an exposure of the moon, capping the lens and then waiting until the moon has moved higher and out of the view, when the exposure can be continued. This is perhaps the very best method of securing a moon in the view, and it can be strengthened considerably by careful local intensification and pencil work. Avoid over-exposure in moonlight photography. There is a considerable amount of latitude in night work in the country. You should never give more than 30 minutes on a well lighted scene with full moon, a rapid plate and the lens stopped to F. 11. If you give double this exposure the result is apt to be a "daylight" effect, no matter how carefully the plate is developed.

514. **Panoramic Views.**—Panoramic Views may be taken on a single plate, making the photograph from a great distance and then enlarging the horizon of the negative and trimming the rest away; or, two or more plates may be exposed, turning the camera on its center and joining the prints together. But in this case it is preferable to be very much nearer the subject to be photographed, otherwise the scene will be so small that the whole picture will present a mass of minute detail, only discernable with a powerful magnifier.

515. **Snow Scenes.**—Either city or open country abound in choice subjects for night photography after a fall of snow, when everything is covered with a white mantle. If the night is clear and the objects stand out sharply owing to the reflected light from the snow, the illumination is increased and the exposure, therefore, is cut down approximately one-half. Under such circumstances it would

be possible to make a fully lighted street scene, using a rapid plate and F. 11 stop, in 5 to 10 minutes.

516. **Apparatus for Night Photography.**—No special apparatus is required for night work but much can be said in favor of a fixed focus camera, as it saves considerable trouble in focusing. A full size finder is quite essential, however; otherwise an undesirable light on the left or right front that should be cut out will in all probability be left in. Of the tripod cameras the best form is a square bellows with an extensive rising front; if a conical bellows be used it must have loops on the sides or top to prevent the bellows from sagging and cutting off the light. You should be able to judge the amount of view included within the angle of the lens. The focusing scale on the camera must, of course, be accurate, and your judgment of the distance from the camera to the subject should be approximately correct. If, however, you wish to focus on the ground-glass you should look for the strongest points of light. For instance, if there is an electric light in the view occupying almost a central position with reference to distance, focus on this sharply. It is essential that you have a rigid tripod, for the duration of the exposure is such that the camera must be perfectly stationary, otherwise a slight breeze might cause sufficient movement to give a blurred image, instead of one perfectly sharp.

517. If a strong wind is blowing it will be almost impossible to do anything, so if you cannot find a sheltered position it will be wise to abandon the attempt to make a night photograph until a better opportunity is presented. Even on the most tranquil nights the tripod must be well set and free from vibrations. It seems hardly necessary to warn you to avoid making pictures from bridges where there is danger of vibration through traffic.

518. **Leveling the Camera With a Spirit Level.**—When photographing street scenes which include buildings, it is very essential that the camera be perfectly level. Many folding cameras are provided with a level, but a more convenient form is one which is not fastened to the instrument

in a stationary manner. No matter what position the camera may occupy, you should be able to place the level on it

Illustration No. 48

in a position where it can be constantly seen. There are numerous levels on the market, such as the Ingento, and the Taylor, Taylor & Hobson's Single Level (shown in Illus-

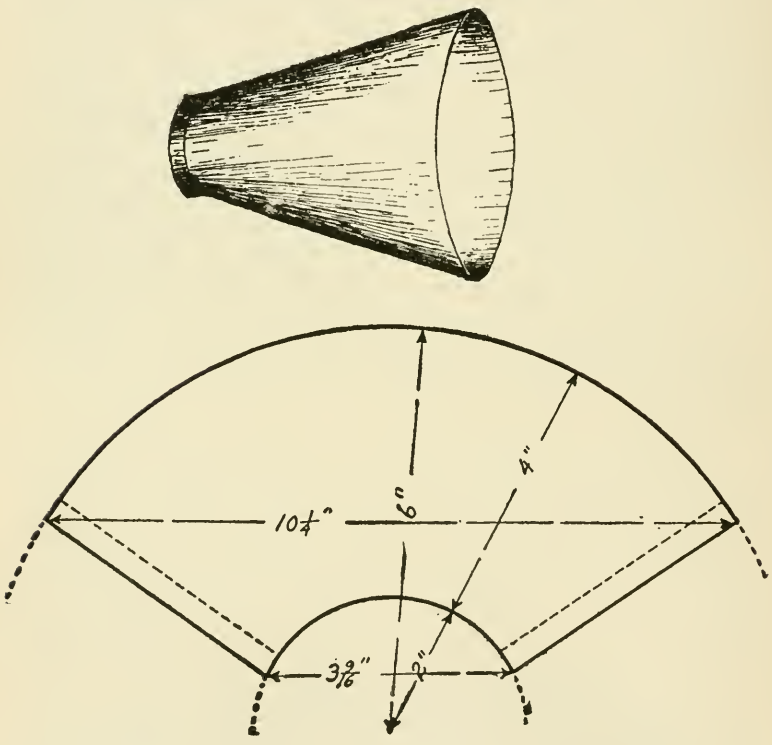


Illustration No. 49

tration 48). It will be necessary to have a light of some kind in order to see to properly level the camera, therefore,

a short piece of candle should be a part of your equipment. It is very important that the camera be leveled properly, otherwise the picture will result in badly distorted buildings, telephone poles, lamp posts, etc.

519. **The Lens Hood.**—A lens hood is useful to shield the lens from any light that may reflect from either side. Although it may not come within the angle of view it is likely to cause "flare" or "ghost" images through reflection in the lens. For this purpose prepare a small cardboard cone to fit over the lens barrel. It must be of sufficient size to exclude all reflected light. For the average lens a cone about 4 inches long and wide enough at the mouth to keep outside the angle of view, is sufficient. See Illustration No. 49.

520. **Wet Weather.**—When working in wet weather a waterproof cover is necessary for the camera. Care must also be taken to keep moisture off the front of the lens. The lens may be wiped with a soft cloth kept for the purpose.

521. **The Lens.**—Any lens may be employed for making night pictures. In fact the ordinary rapid rectilinear lens will answer every purpose and produce remarkably fine effects. The only advantage of a rapid lens is the decreased amount of exposure, but whatever lens may be employed the aperture best suited for work of this nature is F. 11 or U. S. 8. Where objects in the view are situated at considerable distance from each other it may be necessary to stop down to F. 16 or even F. 32. There is much less danger of halation if the lights which are included in the view are focused sharply.

522. **Making Exposure.**—Where there is no necessity of closing the lens during the exposure, to avoid moving bright lights coming into the view and effecting the plate, the ordinary shutter may be employed. When photographing street scenes, automobile, street car or bicycle lights may suddenly enter in field of view. Where your camera is not fitted with an automatic shutter, you should then cover the lens with the cap, your hand, hat, or any

other similar object. It is even possible to work without a shutter at all, simply withdrawing the slide from the plate holder and thus exposing the sensitive plate. Whenever an objectionable object comes within the field of view the slide of the holder may be placed in front of the lens until the light has disappeared; then, you may proceed with the exposure. When the so-called *regular shutter* is used, there is danger of moving the camera when resetting the shutter. Therefore, it is far better to work without a shutter than to run chances of having your results spoiled by moving the camera.

523. **Plates for Night Photography.**—The quicker the plate the better, although any plate, fast or slow, may be employed. It is advisable to use a double coated non-halation or backed plate. A slight amount of halation is really necessary for pictorial purposes, except when enlarging is resorted to, for then the halation magnifies with the enlargement.

## Practice Work.

524. **Selection of Point of View.**—In choosing the point of view there are certain things which should not be overlooked. In the first place, the nearest and brightest light; whether it is objectionable, and if so, how to avoid it. It goes without saying that you should photograph street scenes at a time in the evening when all of the stores are illuminated. As the ordinary figures which move about on the streets will not affect your working, it is advisable to make exposures as early in the evening as possible, for then you will be sure that all of the lights will be burning. Lights from electric cars, automobiles, bicycles, and other forms of similar traffic should be watched for, and whenever they enter the field of view immediately cap the lens or place some object in front of the lens, so that the bright lights will not effect the sensitive plate. If these lights appear and the lens is left open, the plate will be crossed by numerous

black lines, which will look like scratches, or telegraph wires.

525. **Exposure.**—Under each of the previous sub-headings we have given approximate exposures for the various subjects that you will be likely to deal with. Remember that these exposures are only *approximate*, and a little latitude on the side of over-exposure can be easily remedied in the developing. If the sky be particularly dark there is not so much risk of over-exposure. It is when illuminated by a full moon, or on summer nights when the sky is distinctly blue, that you run the risk of over-exposure. For daylight work there is an established rule, "expose for the shadows and let the highlights take care of themselves." This does *not* apply to night work, for if sufficent exposure were given to fully time the shadows you would produce a daylight effect. It is not desirable to produce full detail in all portions of night pictures; do not attempt to secure any more detail than you can actually see.

526. **Development.**—Development must be carried on in a very dilute and slow working developer. On no account should a plate be developed in strong developer. A regular pyro-soda developer, diluted with water, such as the Universal Developing Formula given in Volume II., will give excellent results, while if a quick developing agent, such as rodinal be used, dilution must be carried to the extreme —1 dram in 20 ounces of water. Be sure to keep the plates covered during development, and thus protect them from the ruby lamp, which, owing to the prolonged development, is very likely to cause fog.

527. Make proof prints from each experiment, and place your notations, which will give you full information regarding the manner in which you proceeded to secure the results, on the back of each, and file in your proof file for future guidance.

# CHAPTER XIX.

## DIFFICULTIES—NIGHT PHOTOGRAPHY.

528. **Lightning Flashes.**—The greatest difficulty in securing practically perfect negatives of a lightning flash will be found in pointing the camera in the proper direction to have the flash appear in correct position on the plate, and not too far to one side or the other of the picture space. You will find that, as a general rule, forked lightning flashes occur a number of times in practically the same position in the heavens, and if you will watch one or two of these flashes before uncapping the lens, you will have gained approximate knowledge of the proper position in which to point the lens. Do not try to photograph sheet or heat lightning, as you will only be wasting your plates.

529. **Unsuccessful in Securing Window Displays.**—At times it is impossible to successfully photograph a store front or store window by daylight, because reflections in the windows of objects on the opposite side of the street will practically obliterate goods displayed in the window. Making photographs of window displays, by flashlight, is an improvement over daylight, but the greatest success is attained when photographing a window illuminated with its own source of light. Care should be taken that the lamps are shielded. All modern stores have their windows surrounded by electric lights concealed from view, at the same time concentrating the rays of light on the goods displayed. If a night photograph is made under these conditions, your resulting picture will be practically perfect, if you expose long enough to give sufficient detail in the shadows. Many times there is no partition between the display window and the store itself, and when this is the case be sure that all of the lights in the store proper are turned out. They would produce ghostlike effects if allowed to remain burning, as they would be out of focus and thus entirely ruin the desired effects of the window display.

530. **Difficulty in Photographing Tall Buildings.**—The greatest difficulty experienced in trying to photograph an illuminated building in crowded streets is the securing of a proper position from which to make the exposure. If the building is quite tall and the street is not sufficiently wide so that you may get back far enough to include all of the building on the plate, it will be advisable to get above the level of the street. Especially is this true in large cities.

If possible, go to the first or second story of some building opposite the one you want to photograph. The height to which you ascend will depend upon the height of the buildings which are to be included in your photograph. In photographing a six story building you should ascend to the second story on the opposite side of the street. It may be necessary for you to use a wide angle lens, in order to secure all of the building and some of the street foreground on the plate. This will depend entirely upon the distance between the camera and your subject.

531. **Making Exposures While Objects are Continually Moving Within the View.**—Many believe it to be an absolute impossibility to make time exposures when objects are moving within the space, during the exposure; but where exposures exceed ten minutes, and if the moving objects are not dressed in white or light flashy colors, no harm will be done so long as the figures keep in constant motion. If any light colored object remains in the angle of view for any length of time, you should shield the lens until the object has moved; then continue the exposure. Of course, in figuring up the total amount of exposure you must make allowance for the time the lens was covered. As we previously mentioned in Paragraph 522, you must cover the lens whenever strong lights, such as automobile lamps, bicycle lamps, etc., come within range.

532. **Difficulty in Securing Moonlight Effects.**—Typical moonlight effects cannot be secured by including in the angle of view the moon itself, when making exposures of any great duration. As stated in the preceding chapter, an elliptically-shaped mark across the sky will be the only result. It is possible, however, to make a quick exposure of the moon and then wait until the moon has moved out of the angle of view before proceeding to give the exposure for the required detail. In making moonlight effects on the water it is by all means advisable to have the moon behind a cloud. The majority of water moonlight effects are made by using the sun as the illuminant instead of the moon, the sun being under a cloud either at sunrise or sunset. A very quick exposure is made, thus catching the beautiful reflections in the water.

533. **Difficulty in Development.**—The greatest of all difficulties make themselves apparent when you proceed to develop the exposed plates. If proper exposure has been given; if you are employing a sufficiently weak or diluted developer, and if you possess a sufficient amount of patience, you will be rewarded in the end by excellent negatives. Be sure to always make a test print from each negative, as frequently a negative which appears of little or no value will, when printed, show far greater qualities than anticipated.

## CHAPTER XX.

## FLORAL PHOTOGRAPHY.

534. Nearly everyone is impelled at some point or other in their photographic career, to make pictures of flowers. You may begin making floral studies at the very first of the year and continue until the end. At certain seasons the variety of flowers obtainable is limited; yet a collection of photographs representing flowers in season, during the various twelve months of the year, will prove of inestimable value.

535. A complete collection of flowers is, of course, quite an impossibility. But, a very desirable thing to aim for is making photographs of a representative collection of the flowers, securing as many different families and classes as possible. In addition to this, the various phases of the same blossom, from the bud to the fully developed blossom and fruit, are worthy of attention.

536. **Decorative Value.**—Wild flowers, in all their great varieties, will appeal to many, but in photographing the flowers you must not forget the highly decorative value of the stems and leaves. Interesting studies may be made by photographing the foliage alone at its different stages: First, the twig, then the newly formed buds, the tinted leaves, the flowers, and lastly, the flower-laden bough.

537. It will prove a most interesting study for the city photographic worker to keep a small cutting in a glass of water, making photographs of the continual changes. An ordinary cutting will come out and grow for fully a month's time in this condition.

538. To the beginner we might say in a general way, use a dark background, and *remember that color counts for*

*little or nothing in the resulting picture.* The aim in work of this kind should be to acquire technical skill. The artistic qualities will then surely follow at the proper time. As soon as a few pleasing prints have been made, you should prepare an album for the insertion of your floral studies. Secure one with interchangeable leaves, so that at any time additions may be inserted in correct succession.

539. **Camera.**—Practically any camera will answer for the making of flower studies; the camera possessing modern attachments, which permit of using the lens in various positions, is preferable. It is advisable, also, to have a camera, the bellows of which is twice the focal length of the lens, as with such an equipment it will be possible to reproduce flower studies in actual size.

540. **Lens.**—The average rapid rectilinear lens will answer every purpose in the photographing of flowers.

541. If the bellows of your camera is of sufficient length, the pictorial effect and the perspective will be much better rendered by employing either a long focus lens or the single combination of the doublet (rectilinear or anastigmat lens).

542. **Use of Plates and Ray Filter.**—The ordinary plate will not render the best of results. It will not reproduce the strong colors of your floral subjects correctly. Orthochromatic plates are much better for this class of work, because most flowers have some shades of yellow, and with these color corrected plates all green and green-yellow foliage will receive a far better rendering. A ray filter *has no* advantage except for deep orange and blue shades, as the best color corrected plates are quite sensitive to yellow and slightly repellent to blue. Therefore, the additional restraint which a color filter would exert would tend to overcorrection, even giving a bright canary color the same density on the plate as pure white.

543. **The Ray Filter.**—The ray filter is quite essential in photographing blue flowers, but it is not necessary to use one of an extremely deep shade. Any ordinary light-colored ray filter may be employed—one that will increase the ex-

BLOSSOMS, CHEROKEE ROSE

Study No. 29—See Page 314

By Mrs. M. S. Gaines

DAFFODILS

STUDY NO. 30 BY S. I. CARPENTER

posure about four times. A glass cell filled with a 1 per cent. solution of potassium bichromate will render very satisfactory results. (See Page 101.)

544. **Speed of Plate to Use.**—For indoor work a rapid plate is best, because when the relatively faint light is considered in connection with the small stop, or diaphragm, necessary to secure proper depth of focus, the exposure will sometimes require minutes.

545. **Backgrounds.**—Backgrounds for use in photographing cut flowers need not be at all expensive. Excellent results can be secured by having at your command several pieces of cardboard 22 x 28 inches in size, or larger. These cards should be of various colors, but you will find that the mounting board, known as "carbon black," will answer for most purposes. Be sure that the surface of the cardboard is dull and not glossy.

546. **Space Behind the Flowers.**—If the flowers are to be shown in a vase, and any of the table is visible in the photograph, the point where the table and background join will make a strongly marked line across the composition. This, as can be seen on reference to any flower picture where it is visible, is a mistake. It at once reveals the artificiality of the whole arrangement, by making it quite clear that the background, instead of being a mere suggestion, is purely artificial. If the picture is to be a success, this must be avoided in some manner. It will not do to carry one piece of paper down the background and along the table in a curve. The lighting will show the true nature of this at once, and the effect will be as bad, or even worse, than the other. The simplest plan is to have as great a width of table behind the flowers as possible, and place the background some distance beyond the table. By this means the table will blend into the background, and being out of focus, no harsh line will be visible. The perspective of the vase will show—however much the table is foreshortened—that there is a space behind the flowers, while the actual boundaries, being quite out of focus, will be softened down.

547. The only precaution that need be taken is to have

the background far enough away from the flowers to prevent their shadows being in evidence. Shadows only reveal the presence of the background, and its temporary and artificial character, for by repeating the lines of the flowers —with variations—they add considerably to the difficulties of arrangement.

548. **Special Background for Flowers.**—Where it is intended to make numerous flower studies, a special background of some nature should be provided. A simple arrangement on the principle of a copying board may be constructed in the following manner: Take a piece of wood not less than one inch thick, and cut it 10 inches wide and 20 inches long. This is to be used as the support. In the middle of it, and running the longest way, nail a board, or boards, which will give a background dimension of 20 x 20 inches. If you are not able to secure a single board of this size, two 10 x 20 inch boards may be used. A one inch strip should be nailed across the top, to bind them together and prevent warping. Cover one side with black velvet, felt or flannel, the other side with white cloth. Tack on the edge *only*, to prevent the tack heads showing on the face of the board. By using the dark side for light flowers, and the light side for dark flowers, the necessary contrast will be secured. Velvet or flannel is best, because it will absorb rather than reflect light.

549. **Avoiding Heavy Shadows.**—Heavy shadows can be avoided by exercising care in not placing the flowers too near the background, nor using too strong a light. A white diffusing curtain on the window, and a reflector of white or gray material, will assist you in getting an even illumination. Remember, though, that roundness and relief are secured by employing a broad lighting; i. e., one where the rays of light fall on the flowers from the front as well as side.

550. **Lighting the Flowers.**—The light should fall on the flowers in exactly the same manner as on a person posed for plain portrait lighting; i. e., you must not have all side light, all top light, nor all front light. A mean between

these must be aimed at, so that the light will fall at an angle of 45 degrees, and by employing a little reflected light most excellent results will be secured.

551. **Line of Beauty and Arrangement.**—The first and greatest qualification for the floral photographer is that he must have a liking for flowers. It is necessary that he find himself in sympathy with them, must feel the mute appeal they make to his finer sensibilities, or he will get no real beauty into flower photographs. The next qualification is closely allied to the foregoing, and is a feeling for beauty of arrangement, a recognition of the power of line and of the due disposition of tones. It is this which makes flower photography a special branch which should appeal to women, in whom these qualities predominate, though often unconsciously trained and developed. The best possible photograph of a badly arranged group of blossoms can only be a failure, while graceful composition will go far to compensate for poor photography.

552. **Flowers the Subject, Not Vases.**—One of the mistakes made by the beginner in flower photography is in the selection of showy vases to hold the blossoms. In the majority of flower subjects made by leading photographic artists who spend considerable time along this particular line, you will observe that no vase or other vessel whatsoever is seen; the flowers, and the flowers only, are the subject.

553. There is no real reason why a vase should not be seen; it may help the composition, and is valuable at least for the indication it gives as to how the flowers are supported, explaining positions which otherwise might excite the wonder of the observer, to the ruin of the pictorial effect. But, if a vase is used it must be of the very simplest kind, and on no account one which in its design or decoration will compete with the flowers themselves, which are the true subject of the picture.

554. A much more convenient method of handling this class of work, and especially where flowers are to be pho-

tographed singly, will be found in employing an arrangement which will permit placing the flowers on the floor—laying them on the material which is to be used as the background. The camera of course will have to be tilted at right angles to its usual position, so as to take in its field of view the complete arrangement of the flowers.

555. It is possible to obtain a special attachment from photographic dealers, which may be placed on the top of the tripod, permitting the tilting of the camera to any desired angle.

556. **Lighting the Flowers.**—The material upon which to lay your flower studies may be exactly the same as that described in Paragraph 548, relating to the background on the copying board.

557. There are times when heavy shadows will prove of great assistance to you in securing pictorial effect. However, the shadows can be made as strong or as weak as you desire to have them, by the judicious use of a white diffusing curtain placed on the window (if you make the picture indoors). A reflector of white or gray cloth thrown across a chair back will also help you in obtaining an even illumination. The greatest amount of relief and roundness can be secured only by having *the source of light fall upon the flowers from the front as well as the side.* If you are doing this work out of doors, you should work in the shade of some building so that the direct rays of the sun will not fall upon either the camera or the flowers.

558. The great advantage of arranging flowers on a flat surface and pointing the camera downward is that you are able to do away with tacks and strings and other paraphernalia for supporting the flowers. You will also be able to obtain any arrangement you desire, and you will find that the flowers will remain in practically any position in which they are placed.

559. If your exposures are made indoors, be careful that the doors and windows are shut, thereby avoiding pos-

CHEROKEE ROSES

STUDY NO. 31

BY MRS. M. S. GAINES

CHRYSANTHEMUMS

STUDY NO. 32—See Page 314 BY DR. A. R. BENEDICT

sible draughts which might cause a slight movement of the flowers. The best position for the flowers is about 4 to 5 feet from the window, not on a line with the side of the window but a little back of it, the camera being placed on the opposite side, and as near to the window as possible. A reflecting screen should be employed to illuminate the shadows.

560. **Diffusing the Light.**—Many flower photographs are failures on account of harsh lighting. Impressions of flowers are gathered from them as seen in the midst of a diffused and gentle light, not fixed within a few feet of the window, exposed to what is essentially a harsh illumination from a small source. Yet we must use the window in photography for the light to be controllable at all. Therefore, endeavor to soften and diffuse the light coming through it as much as necessary. To do this, one of the most effective methods will be found explained in Paragraph 549. A piece of cheesecloth will answer admirably for diffusing the light. This may be pinned to the window, and raised or lowered according to the effect you desire to secure.

561. **Focusing.**—In focusing take the utmost care to get the foremost parts of the flowers perfectly sharp. It may happen that parts in foreground shadows will escape notice unless you give this particular attention, for no matter if you do overlook them on the ground-glass they will show plain enough in the print, and if not sharp will spoil it. If there is any depth of focus, or, in other words, sharpness, to spare, it should be in front rather than back of the flowers, because the background being completely out of focus will enhance the artistic effect. If a commercial flower study is desired, then all of the flowers must be perfectly sharp. You focus, however, with the lens wide open, on the foreground of the subject; then stop down until all parts are as sharp as you desire them to be.

562. **Exposures.**—When working by a window facing north, it being perfectly clear out-doors, the sun shining, and you reproduce the flowers one-half actual size on the fastest orthochromatic plate, using stop F. 11.3, or U. S. 8

and a ray filter which will increase the exposure five times, it will be necessary to give an exposure of from 15 seconds to 1 minute, all depending upon the character of the subject —whether light or dark in color. Whatever the actual exposure required it must be carefully executed, and long enough to give detail in the deepest shadow.

563. **The Proper Development** of the plate is where many flower photographers fail, and of course even the most skillful will occasionally make mistakes. The developing agent is of little importance, providing it does not fog the plate. The Universal Developer given in Volume II. is excellent for this purpose.

564. Too much stress cannot be laid upon the stopping of the development at *exactly* the right time—*the time being when the very highest lights have got their full printing value.* If developing is carried too far the highlights will become clogged, for the delicate half-tones will get as dense as the very highest points of light, and in the print will give hard, chalky masses, which are anything but pleasing. If, for any reason, development is carried too far, and the highlights are blocked, the negative may be reduced by using Potassium Ferri-cyanide Reducer, as described in Volume II.

565. If the first appearance of the image indicates that the exposure is correct, it is not necessary to pay any attention to the appearance of the shadows during development. They will take care of themselves. The exposure is what determines whether they will be right or not. If over or under-exposed, treat the plate accordingly. (See Volume II.)

566. **Developing Backed Plates.**—Before pouring the developer on the plate, hold it under the water tap while the back is rubbed with a brush to remove most of the backing (if you have backed the plate according to the method described in Paragraphs 171 to 178). If the plates have been backed with paper, this should be removed previous to placing the plate in the developer. After the backing has been removed, return the plate to the developer and again cover. From time to time examine the back of the plate.

WATER LILIES

Study No. 33—See Page 314

By Mrs. M. S. Gaines

BLUE FLAG

Study No. 34 By John M. Schreck

After the highlights are distinctly visible there, the actual extent to which the development is to be carried is determined by looking through the plate at the lamp.

567. **Practice Work.**—Study very carefully the preceding lesson and then take the simplest flower obtainable and proceed to carry out the instruction. After developing the negative make proof prints from each experiment. Place your notations, giving full information regarding the manner in which you proceeded to secure the results, on the back, and file them in your proof file for future reference.

## CHAPTER XXI.

## WILD FLOWERS.

568. There are few branches of picture-making more fascinating, especially in the summer time when it is possible to work out of doors, than the photographing of wild flowers where they grow. It is far more enjoyable than reproducing cut flowers at home, as it takes the photographic enthusiast into the fresh air. On landscape tours numerous opportunities for taking advantage of the instruction which follows will present themselves. It is absolutely impossible to reproduce wild flowers at home. In the first place, they wilt and wither before it is possible to reach home with them, and in their wilted condition they produce anything but a pleasing picture. In addition to this difficulty, to produce results true to nature you should photograph the flowers in the midst of their natural surroundings. Under these conditions only is it possible to obtain the best of results.

569. **Camera Bellows.**—The bellows on the camera you are to employ must be of considerable length. This class of work cannot be treated as you would regular landscape photography. It is not the aim to secure a few dark specks on the plate, surrounded by a mass of uninterpretable things. The desire is to secure just the opposite of such result—a picture of real flowers, leaves and grass. The bellows should have an extension equal to twice the focal length of the lens, and as a 6 inch lens is quite suitable, the bellows should stretch at least 12 inches. In this manner images of equal

size to the flowers themselves may be secured, and in some instances a trifle larger, which is a great advantage.

570. **Camera and Lens.**—The camera should have a rising front and a reversible back. The shutter is not of much consequence, as there will seldom be need to use it, exposures generally being of several seconds' duration, making it easily possible to make them by the use of the lens cap. The ordinary rapid rectilinear lens of good definition which will give you all around sharpness at F. 8 will answer every purpose in photographing wild flowers.

571. **Tripod.**—It is almost impossible to use the ordinary tripod to secure this class of flower photographs. The tripod should be of such a type as to admit of the camera being lowered to within 12 inches of the ground. As it is frequently necessary to tilt the camera at an angle, a special tilting attachment will be found extremely handy and convenient.

572. **Tilting Attachment.**—The convertible tripod attachment mentioned in Paragraph 555 will be found very convenient in photographing wild flowers, as it permits of the camera being tilted at any desired angle. Especially when photographing flowers that lie flat on the ground you will find the convertible tripod attachment, when placed at a right angle, a very convenient accessory.

573. **Avoiding Movement of Wild Flowers.**—The greatest of care must be exercised that the flowers do not move during the exposure. If you are photographing but a few flowers, and the view does not include any great amount of space, it is possible to fasten a sheet of cloth or other material, on two or three sticks which have been driven in the ground, on the side of the flowers from which the wind is blowing. Care must be taken, of course, that this "wind shield" does not come within the angle of view.

574. In taking flower pictures in a natural state, it will be necessary to study for some little time the point of view, angle of view, as well as the principal flower—or group of flowers—to be included in the picture. This work

HEPATICAS

STUDY NO. 35 BY JOHN. M. SCHRECK

HILLSIDE PATH

STUDY No. 36—See Page 312 BY WM. T. KNOX

really requires more careful study and thought than landscape photography itself, if such a thing is possible; but the principles of arrangement, the obtaining of point of view, etc., are all absolutely the same as have been previously taken up in relation to composition of landscape photography. As each scene in a landscape requires special treatment, so does every subject in wild flower photography. Orthochromatic plates and screens are a necessity in order that true color value may be obtained. The information already given upon this subject should be carefully read again, if you are not familiar with the use of color corrected materials.

## CHAPTER XXII.

## ANIMAL PHOTOGRAPHY.

575. **Introduction.**—There are few branches of photography affording more pleasure, yet requiring more patience, than the photographing of animals, whether domestic pets, wild animals, blooded cattle or horses. To obtain satisfactory results, the photographer of animals must have a thorough knowledge of his subject. Especially is this true when photographing wild animals, and in this latter case you should be a naturalist in a practical, if not in a scientific sense; otherwise, you will be working totally in the dark.

576. There are but few general rules applying to the photographing of all classes of animals, each particular kind possessing peculiar points which must be brought into prominence in order that satisfactory results be secured. No matter whether photographing animals or persons, remember that it is essential to have the important features predominate, keeping in subjection the uninteresting as well as the weaker points.

577. **Camera.**—Although it is permissible to use almost any instrument for the photographing of animals, yet if you desire to make this subject a study you will find that a camera of the reflex pattern is preferable. When this instrument is fitted with a high grade anastigmat lens it is possible to make instantaneous exposures and secure photographs of animals in most natural positions. The ability to watch the subject up to the instant of exposure is another strong feature in favor of the reflecting type of cameras. Naturalists, or those who wish to photograph wild animals in their native haunts, will find it necessary to use an extremely long focus lens or one of the telephoto type, as with an equip-

ment of this kind it is possible to remain a considerable distance from the subject, unobserved.

578. **Photographing Domestic Pets.**—A cat or a dog is to be found in almost any home, and either of these animals will be excellent subjects with which to experiment. It is advisable to have everything arranged properly before posing the subject.

579. Random methods cannot be employed in this branch of the work. It is necessary that the greatest amount of patience and kindness be employed. You must wait patiently until such a time as the animal places itself in the desired position, and unless patience is combined with kindness you are doomed to disappointment.

580. The average worker makes the mistake of having the image too small. It is advisable to have the subject from six to ten feet from the lens. At this distance, with average light out-doors and using a stop not larger than F. 16, the exposure will be approximately 1-25 of a second. Much will depend, however, upon the color of the subject. A black dog, with a heavy coat of hair, will require fully double the exposure of one light in color. If you are holding the camera, be very careful that you do not move it, for although this exposure is rather short it requires a certain amount of skill to avoid traces of movement showing.

581. **When photographing dogs** it will be almost impossible to set your camera on a tripod, as this subject is usually quite lively and will tax your patience to a considerable degree.

582. Dogs having long coats of hair, like the collie, should be photographed on a day when the wind does not blow to any extent, as the hair will be blown about, making it almost impossible to secure a good picture. A general rule in photographing dogs is to have them face slightly toward the camera. Do not take a straight, broad side view, unless the proportions of the dog are such as to give a well composed picture and show good lines throughout. This rule holds good particularly with the heavier types of dogs, such as the bull-dog. The hound, collie, and dogs of slight

"PRINCESS"

Study No. 37 By John M. Schreck

SWANS

Study No. 38 By Harriet Lyman

FIGHTING IT OUT DOWN THE STRETCH

Study No. 39 By John M. Schreck

frame may be photographed from the side. It is necessary to use judgment, of course, as each individual subject will require somewhat different treatment.

583. **The cat** is an extremely easy subject to photograph, if the picture is made at home in a familiar position. Cats are not favorable to strangers at any time, less so when placed before a camera. The cat may be photographed indoors or on the porch where there is good light. The background is a feature which must be taken into consideration, and if possible a white one should be employed.

584. There is one thing in particular which will please this subject. A cat likes to be warm and comfortable, and if you place her on a piece of flannel it will be very seldom that you will have any trouble to secure satisfactory results. A sheet hung over a clothes-horse will answer as a background. The flannel on which the cat is laid may also be of white. A cat photographed in this way against white comes out in the picture more like a very clever drawing, for the camera is an excellent draftsman if you will only utilize its powers. If the cat is photographed on a cushion, chair, or amid like surroundings, the accessories are made of equal importance with the cat and all the beautiful lines are lost.

585. In photographing a cat you may find it necessary to have an assistant to entertain the subject while you are preparing to make the exposure. Do not make the cat too playful, however, or she will move out of focus and give you no end of trouble. Simply stroke her gently or play with her with a bit of string. It is not advisable to offer food, except as a last resort, as it will make the cat too eager and you will then be unable to have her lie in the position you desire.

586. The secret of success lies in your being patient. The work should only be attempted when you have plenty of time. It is better to get your subject onto a certain spot and focus; then insert the plate holder and wait for a good pose.

587. In addition to the background just mentioned, we

wish to impress upon you the importance of always having backgrounds as simple as possible. Do not employ one that will detract from the subject.

588. It is important that animals be photographed in a good light, and nothing will surpass the outdoors on a cloudy day, or a place protected from the direct rays of the sun.

589. It is usually advisable to get everything ready before placing the subject in front of the camera. For instance, if it is necessary to have a small platform or a box on which to place the subject, this should be arranged; then place your hat or any similar object in the position which is to be occupied by the subject. Focus sharply on this; remove it, and after inserting the plate-holder, setting the shutter and withdrawing the slide in the holder, place the subject in the position occupied by the hat. See that the platform or support is perfectly solid for if it is at all movable it will frighten the subject. As soon as the proper position is secured the exposure may be made. By following this method the subject will be perfectly fresh and calm, and when placed on the platform or box in the same plane as the article which was focused, it should be absolutely sharp.

590. In the case of the cat it is much better to allow her to choose her own position. Pat her with the right hand, and at the same time hold the bulb of the shutter in the left ready for the first opportunity to make an exposure.

591. **Prize dogs** require all their strong points to be shown in the photograph. They must be handled according to their individual temperament; therefore, it will be necessary to have some one with the dog to give you special instructions, if you do not know the important points of the animal.

592. There are many other subjects to be found in and around the home and especially so in the country, very charming pictures may be made of **young chickens, ducklings or goslings.** Particularly fine opportunities present themselves when photographing water fowls swimming, as the reflection of light from the water affords a strong il-

lumination which helps greatly in the lighting. Chickens feeding are good subjects for pictures.

593. The composition will be materially improved if a little child is properly placed in the act of throwing grain to the birds or fowls.

594. When individual birds are to be photographed, great care must be exercised to see that the plumage lies smooth and feathers are not out of place. **Prize birds** should be photographed in the presence of their owners who know their individual points of excellence and who will inform you of them. When thus made acquainted with the predominating features of the bird, take great care to bring these points forth into prominence.

595. It is very important that the background be plain and not of such a nature as to detract from the appearance of the bird. Especially is this true when photographing prize birds, for it is a very easy matter, if a plain background is not employed, to have it detract from the special points of the fowl.

596. The light must not be hard and contrasty. It is far better to work under a soft diffused source of illumination, for this latter will give you an opportunity of securing detail in all parts of the subject. It is hardly possible to make the exposure indoors unless you have a very large window by which to work. It is far better to work out of doors in the shadow of the house, for under such circumstances if the light is quite bright you will be able to give a very short exposure.

597. **Cattle.**—The photographing of cattle and especially of blooded stock, necessitates a certain amount of knowledge of the important points which should be brought into prominence. Especially is this true when photographing milch cows. The point of view selected should be one which will show the milk veins, udder and the hind quarters of the animal in greater proportion than the head, or front quarters. Care must be exercised that the cow stands in proper position to show the whole of the udder. In order to accomplish this the hind leg nearest the camera should

be farther to the rear than the one on the opposite side of the cow. For instance, if you are making a picture from the right side, the cow should have taken a step forward with the left hind foot. The camera should be held about 18 inches from the ground and pointed slightly upward, thus calling particular attention to those features which are of most vital importance to the dairyman.

598. Stock that is intended for market should be photographed to show the breadth between the shoulders and the massiveness of the animal, therefore it is necessary to choose a view-point more to the front of the subject.

599. Patience is required in this feature of photographic work, and although the majority of domestic cattle are tame, their curiosity presents another difficulty and it is at times hard to get far enough away from the subject. Especially is this true when you are striving to photograph one animal by itself.

600. It is not advisable to try to separate one cow from the herd and keep her so separated until you have her photographed. It is better to have her placed in a small pasture, or large pen by herself, and allow her to remain there until she is somewhat accustomed to her surroundings and has forgotten, to a certain extent at least, the fact that she has been with other cattle.

601. The background is a feature which should receive attention also. Have the background as plain as possible—trees in the distance (out of focus) form a good background, yet care must be exercised that there is not too much sameness between the background and your subject, for the cow is the all important feature of the picture and must stand out in contrast and relief from all other surroundings. The place selected in which to photograph your subject should be one well covered with grass, for plain ground or dirt does not make an acceptable base upon which to pose cattle.

602. **Large Heads.**—The head of a calf or cow, face front, makes one of the finest domestic animal pictures that it is possible to secure, for such a portrait is always full of

natural expression. Your supply of plates as well as your patience will be fully tested before you have secured a perfectly satisfactory result; but any pains you may take will not only well repay you from the standpoint of having satisfactorily mastered this subject, but its commercial value will be no small item. Pictures of this class find ready sale.

603. **Horses.**—One of the most difficult of the domestic animals to photograph is the horse. It is comparatively easy, of course, if it is in harness or held by means of a halter, but to photograph the animal free from all such restraint is an entirely different proposition. The good points of the horse may be shown by photographing it when held by a halter. It is also possible to paint and retouch the halter out after the negative has been made, but it requires careful work to accomplish the best results.

604. The most successful method of photographing a horse is to place it on a slight incline so that the fore feet are a trifle higher than the hind feet. In this position the head is thrown up and by making a slight noise the animal will prick up its ears and at this moment you should make the exposure. Always make the animal look alive in the picture. The ears must never point backward, always forward. Do not have the horse standing with its head drooped and looking as if it never intended to move. When the horse is in harness it should be posed on level ground, or a very slight incline. To make horses look lively, a hat may be tossed up in front of them and at the moment they look up, the exposure should be made.

605. **Horses in Action.**—To photograph running horses a lens of excellent speed, also a shutter capable of giving from 1-1000th to 1-300th part of a second is required. It is impossible for the human eye to follow the complex movement of the animal's feet, therefore proper judgment cannot be made as to whether or not the image of the feet and legs secured on the plate are technically and artistically correct. A number of attempts should be made in order to have a number of positions from which to make a selection.

Pictures of running horses should be made with the camera held very near the ground, for this is the only position in which it is possible to secure the proper view of the feet. To make pictures of jumping horses, the same method is employed. The height of a jump may be somewhat exaggerated by placing the camera near the ground. For extreme cases an excavation may be made in the ground for this purpose and pictures made from there increase the actual height of the hurdles and make a small jump look very remarkable.

606. Do not be surprised if, upon development of the negative, your animal lacks a tail, leg or even the head. After a few experiments you will be able to judge correctly the exact moment for releasing the shutter and secure the subject on the plate with proper spacing and margin. If you are using a hand camera, be sure to start releasing the shutter before the horse's head has reached the center of the plate. However, if you are using a reflex type of camera, it is possible to release the shutter just a fraction of a second before the animal is in proper position on the ground-glass.

607. If the horse is to be pictured at work, select the point of view past which he will come, being extremely careful that the camera is so placed to secure a part front and part side view.

608. **Animals in Landscape Photographs.**—When making pictures of pastoral subjects, cattle, horses and sheep often prove useful, either as providing a chief motive, or for carrying on spots of light to break up an uninteresting space. Although they might be amiable to control, yet they are just as easily frightened and especially is this true of sheep. When once unrest seizes them, attempts at picture making may as well be abandoned for a time.

609. Some animals appear to be indifferent to strangers so long as they are not required to move, whereas others are wild and shy and require most careful stalking if any degree of pictorial success is to be achieved.

610. Successful animal pictures are most readily obtained when using some form of hand camera. This allows the flock or herd to be followed from place to place and at any moment when a group is seen to be satisfactory, an exposure may be made, by simply pressing the spring release or bulb, and so securing a picture full of life and action. Of course, the reflex type of camera cannot be surpassed for this class of work, and as it shows a full size picture, just as it will be finally reproduced, right up to the very instant of releasing the shutter—exposing either plate or film, as the case may be—you get in the negative exactly what you intended to have reproduced.

611. Another reason why a camera without a cumbersome tripod is so much better in this class of photographic work, arises from the fact that one is able to walk among sheep or cattle without attracting undue attention. The strange looking tripod, which has to be erected before the photograph can be taken, increases the curiosity of the subjects and also tends to frighten them. Especially is this ill-effect likely to present itself when delay or uncertainty in finding the correct point of view is experienced. When a change of position is necessitated by the sheep, or other animals moving from one place to another, the camera and its tripod have also to be moved, hence it becomes a disturbing element and animals are likely to become suspicious and suddenly race off to some other part of the field.

612. **Exposure.**—In the photographing of animals it is very important, no matter what is your subject, that full exposure be given. It is far better to have too much than too little, because if there is a tendency toward under-exposure there will be little or no detail in the shadows. Of course, when photographing moving objects it will be necessary to give a very short exposure, but always give just as much exposure as possible and you avoid any chance of movement. 1-5th to 1-25th of a second is approximately correct for average light when using stop F. 11.

613. **Development.**—Having given full exposure to the plate, secure all possible detail and commence development

with the ordinary developer diluted one-half with water. With this the negative is slow in gaining density, while detail still continues to come up in the shadow parts and a softer and more delicate negative is the result. If the plate develops quite flat, place it in a normal strength developer and continue until fully developed. It is quite a common error to develop negatives of animals with too strong a developer, which gives chalky results. If such a negative is to be enlarged, the enlargement would be very unsatisfactory under such conditions.

614. If you know the negative to be under-exposed treat it as an under-exposure and follow the directions given in Vol. II for manipulating under-exposed negatives. Tank development is one of the best methods to employ when developing negatives of animals, as it secures the best possible results from the exposure.

615. **Practice Work.**—In order to become proficient in the photographing of animals, you should proceed to photograph different subjects, following carefully the directions which have been given. Remember that it requires a considerable amount of patience to secure a perfect negative of the majority of animals and you must try to work as quickly, yet with as little apparent haste as possible. You should have everything in readiness, the camera arranged and the lens focused on the spot that the subject is to occupy, if it is a cat, dog or similar subject, before placing the subject in position. Then when all is in readiness it may be placed in position and the exposure made as soon as the proper position has been secured. Remember to give consideration to the background, for this feature may entirely ruin or it may add greatly to your final results. The plainer and simpler the background the better. It must not detract from the subject.

616. In photographing larger animals you will find it advisable to use the camera without the tripod, for the tripod will usually give considerable trouble as it will be necessary to follow your subjects in order to secure the best view of them. Then, too, any additional para-

phernalia is liable to frighten your subject. When holding the camera in your hand you should not give more than 1-25 second of an exposure and even then the instrument must be held rigidly or there will be danger of getting a double or blurred image through movement. For your first work it is not advisable to make more than two or three exposures before developing them. After a little practice, however, you will be able to correctly ascertain the correct exposure and you should experience no difficulty in securing excellent results. Each negative that you make should be proofed and full information written on the back of each proof for future reference.

## CHAPTER XXIII.

### Natural History Photography—Birds, Insects, Animals, Etc.

617. **Photographing Wild Life.**—At all seasons of the year there is an opportunity for securing excellent records of both birds and animals in their native wild state. This class of photography is intended more especially for those who love the outdoor work that will lead them to the native haunts where the most successful results are to be secured. A knowledge of the woods and a desire to learn more of wild life together with a great supply of patience are the essential qualifications for the successful photographing of nature.

618. **Special Apparatus.**—Although it is possible to secure photographs of certain classes of animals, and even birds, with an ordinary hand camera, for the best of results a camera with extremely long bellows and an extra long focus lens, or better still a telephoto lens, should be used. If you wish to employ the ordinary hand camera and if the bellows extension is twice as long as the focal length of your lens, you may remove the front combination (if the lens is a doublet) as the single cell will give an image twice the size of that produced by a lens in its full combination.

619. A dark green focusing cloth and a number of feet of extra tubing, to release the shutter from a distance, will be very convenient. In addition to these it is desirable to have a very short tripod, making it possible to set the camera as low as 18 inches from the ground. A pair of climbing irons such as a telegraph lineman uses will materially assist in the climbing of smooth trees. If your camera is not provided with a carrying case and shoulder

strap, you should provide yourself with a stout cord with which to pull your camera up after you when climbing.

620. A large pocket mirror will be of great service in reflecting light into dark places, especially when photographing birds' nests, etc. A pocket mirror will also be serviceable when working in confined places, enabling you to read the shutter and diaphragm markings from the rear.

621. It is very interesting to make a series of studies of animal life, and especially in the spring of the year when the buds and leaves begin to spring out, you should avail yourself of the ever changing phases of country life before it is too late to secure some of the scenes which it might be desired to record.

622. **Ordinary nest studies** may be taken with almost any camera, but it is when you wish to portray living, moving objects that difficulties present themselves. Quickness is extremely important. Where the landscape photographer takes minutes to compose his picture, the naturalist sometimes has to work in as many seconds. If you will really look for subject material you will be surprised to find the great abundance of suitable studies in bird and animal life. Unless the birds are photographed early in the season it will be almost impossible to secure studies of nests and eggs.

623. Early in the spring it is often possible to photograph **young animals**, such as rabbits, but after they are a few weeks old they will learn to detect the approach of man and will be safely concealed by the time you have come within range of them. Many times it will be possible, however, to set up your camera and focus it on a spot where your subject is likely to appear—a hole in the ground, in a tree or other similar places frequented by the subject. The camera should be protected from view of the animal as much as possible, and then, having attached your long rubber tubing to the shutter, you may retire some distance away and wait for your subject to appear. This method will be found one of the most satisfactory for securing animal or even bird studies with an ordinary hand camera. Where

YOUNG WILD FOXES
FAMILY OF FLICKERS
CHIPPING SPARROW AND KING BIRDS
BLUE BIRDS

STUDY NO. 40

BY JOHN M. SCHRECK

YOUNG KING BIRDS

Study No. 41

By John M. Schreck

the telephoto lens is employed, it will be possible to remain at considerable distance from your subject and secure fully as good results with much less trouble than when you do not use this optical attachment.

624. **Young birds** in the nest waiting for food to be brought to them by the mother bird, form excellent subjects, and many times by placing your camera near enough to the nest to secure a good sized image and then moving back and keeping well out of sight, you may secure a picture of the mother bird feeding her young. Attempts should be made to secure several records, as this is one of the most beautiful sights possible to secure in this class of work.

625. There is a great demand by magazines for accurate **records of wild life**, but it is very important that you make a special note of the date and also keep a systematic record of the series of pictures which you make. Begin with the nest and eggs, showing the surroundings, then make a near view of the nest so that the eggs may be plainly visible. After having waited ten days, or perhaps two weeks from the time the first egg was laid, set up your camera again, concealing it as much as circumstances will allow, and picture the mother bird covering the eggs. Later you may take the brood as they are first hatched and again when they have developed to such proportions that they overlap the edges of their home. At this stage, the fact of your having so frequently visited the nest will help you to obtain a record of the parents feeding their young. Circumstances might offer further suggestions and enable you to further complete the series by other very charming views in and around the nest.

626. **Rabbits** are usually easy to photograph in and around corn shocks. On warm afternoons **squirrels** will be seen running busily to and fro, collecting nuts, barks, etc., and a successful photograph of these creatures will well repay a great amount of patience. All animals, of course, may be taken into captivity, but it is far better, more interesting, and infinitely greater satisfaction is derived, to secure even one good negative of wild animal life.

627. Although indiscriminate photographing of nests and eggs of the young of different types of bird, insect or animal life is to be encouraged, yet a careful, well-kept record of the life story of one particular species is an infinitely more valuable product of your skill.

628. **Insects.**—The photographing of insects, butterflies, etc., is a very interesting study. Especially in the spring and early summer is it possible to find the wayside and ponds teeming with living creatures—butterflies, snakes, frogs, toads, lizards, caterpillars and many other of similar species that are well worth photographing.

629. There are two ways of making picture records of these classes of subjects: First, to make the exposures of the animals just as they are found; second, to carry the subjects home. As the first method is beset with many disadvantages, the latter will be found the most successful.

630. Insects and butterflies should be handled with extreme care to prevent injury. Caterpillars and beetles may be carried in small boxes, while paper bags are more handy for frogs, toads, snakes, etc. For water insects a set of small bottles will be required. It is not advisable to place various species together as they will often eat one another. Each variety should be retained in a separate receptacle.

631. Individual ingenuity should be employed to work up the accessories forming the background and surroundings and let it be your aim to secure in the picture as natural an effect as possible.

632. An interesting series of negatives may be secured with a **caterpillar,** photographing it and then keeping it in a box large enough to contain a small branch upon which it may spin its cocoon. As a caterpillar changes its coat before spinning its cocoon, you should watch carefully and photograph it if the change is sufficiently great to warrant it. When the cocoon has been spun, make a photograph of it, then keep the box tightly closed until after the butterfly makes its exit from the cocoon, when it, too, may be photographed.

633. To secure records of the changes that occur in the appearance of caterpillars, it is necessary to care for them through their progressive stages of growth and photograph them at intervals. When they are not eating they remain quite still on the leaf or twig, which affords splendid opportunities to photograph them.

634. When **fish and aquatic life** are to be photographed, a small aquarium is necessary. Subjects like **snakes and lizards** should be arranged on the farther edge of a table with their heads pointing towards the center. When released they usually move in the direction they are headed and cross the table within the range of the lens. A slight buzzing noise will generally attract and stop the larger species, while a sharp, loud tapping has a similar effect on the smaller ones. Sometimes it will be necessary to put the hand close in front of the creature to arrest its motion when other plans have failed.

635. **Exposure.**—The amount of exposure, of course, is that which is sufficient to give detail to all parts of your subject. The lens must be stopped to an opening just small enough to give sharp definition to all parts of the object. Do not, however, attempt to get the background sharp as this will, in the majority of cases, not only be objectionable, but undesirable. Care must also be taken with reference to the background. It should not be spotted as is many times the case when the light comes through between the leaves and branches. At all times, the plainer and simpler the background, the better. When making studies at home of the smaller animal life, the background should be constructed so as to give the appearance of the natural surroundings of the object, yet this, too, must be very plain and not detract from the subject. Always aim to give sufficient exposure, even if it is necessary to slightly over-expose, as it is far easier to secure satisfactory results if you have a good strong image on the plate than if it lacks detail in the shadow portions.

636. **Practice Work.**—For your first experiments it will not be necessary for you to go into the woods, as you

may photograph a hen standing beside her nest. Another photograph may be secured when the little chicks make their appearance, breaking out of their first home—the egg. From the time they are a week old until you have the young feathered chicken of three months, several interesting records may be made. After a little experience with this subject, it will be possible for you to proceed to photograph the wild birds and animals in the woods. One method which will give very satisfactory results is to place the camera in position, perhaps to an adjacent tree, and by using nuts or other tempting food, bait your subject to the spot you have focused upon and then make the exposure. Of course, it will be necessary to use either a long rubber tube or a string to work the shutter, and to stand at some little distance from your instrument, which latter should be protected as much as possible from the view of your subject. The best of results will only be secured by having more or less of a knowledge of the class of subjects you are to photograph, their habits, individual peculiarities, etc. When making a series of records of the life of an animal, bird or insect, you should provide yourself with an album having interchangeable leaves so that the prints may be inserted at any time.

637. Make a memorandum of the methods employed to secure the photograph and also make a note of all important points connected with the subject shown in that particular print. Further than this, it will be advisable for you to make proof prints as soon as each negative is developed and place all data on the back of the proof, filing it in your proof file. This latter procedure is quite important for you might neglect to make a print and place it in your album until you have forgotten the important points which may be of vital importance regarding the subject photographed.

YOUNG KING BIRDS
NEST AND EGGS, KING BIRD
MOTHER KING BIRD

STUDY NO. 42 — BY JOHN M. SCHRECK

A DULL OCTOBER DAY

STUDY NO. 43—See Page 310 BY JOHN CHISLETT

## CHAPTER XXIV.

## FUZZY PHOTOGRAPHY.

638. A definition is hardly necessary, as the word explains itself. How often you have seen, or made by accident, a beautiful sketch of woodland, water, or sky scenery not at all like the ordinary conception of a photograph, but having that soft, distinct atmospheric effect rarely obtained except by masters of the brush or pencil. To see is to admire such pictures, but where and how to obtain such effects with the camera is a question often asked by photographers, both amateur and professional.

639. The above class of pictures are generally made contrary to photographic rules. They are usually produced at times and in weather in which the ordinary photographer would not think of making an exposure. A few points on how and why such pictures are produced will be of benefit to those wishing to make these with certainty of pleasing and artistic results.

640. Any dark, rainy or foggy day is best for fuzzy effects. A scene which would not give a good picture on a bright day may serve to give excellent fuzzy effects on a dull, hazy day. You will find scenes to answer this purpose near at hand, many of which you passed by at other times.

641. On bright days you will find early morning or late afternoon the most favorable times of day, as the sun is then weak and hazy, and being low, throws a long shadow so effective in such pictures.

642. One of the first essentials is to obtain a softly diffused (not too sharp) focus, except, perhaps, on some prominent object you wish to emphasize in the picture, and even this must not be too wiry in comparison with the balance of the picture.

643. For this class of work a lens of very flat field,

such as a Goerz or Collinear, is preferable, yet very good effects can be produced with any rectilinear lens, or even a single combination. What you want is flatness of field with not too much depth. The latter can be overcome in a very deeply focused lens by giving the front combination of the lens a half or quarter turn, which will softly diffuse the focus throughout the whole picture and aid in giving the true atmospheric effect.

644. Now having chosen your view, select the feature or object you wish to appear most prominent in the picture, and in setting up your camera and focusing, see that this is well in the foreground, as this must be the sharpest part of your picture. If in the background, objects in front of it would be rendered shapeless and blurry, while if you focus well in the foreground the distance will blend off beautifully with the sky and atmosphere, giving just the effect desired.

645. Choose a view-point with the sun well in front and a little to one side, as you thus obtain the shadow effect. Set your lens wide open and with your head under the focusing cloth, and ground-glass well protected from all outside light, push in or draw out the lens, and as you do so you will notice the sky line or background comes into focus first. As the bellows is extended the foreground comes into focus and the background loses in detail. When you have the object you choose to emphasize in the foreground, in soft focus, you will notice the whole scene blends back to no detail at the sky line. The entire outline is soft, clear and sufficiently distinct that any object of importance to the general scene can be distinguished.

646. It will not do to have the middle ground in sharp focus, as in such a case the rear would be out and the foreground an indistinct blur. Have the sharpest part in the foreground. It will not do to use too small a stop. Usually the open lens will give sufficient detail and sharpness.

647. These fuzzy negatives must be fully timed, as under-timing produces contrast, which is just what we want to avoid. Working from the shadow side will also increase

the exposure. Usually one-fourth to a full second will be sufficient, according to time of day and strength of light, and if in doubt rather give too much than too little time, as it is more easily corrected in development. Softness is what you want.

648. Develop in the normal Universal Pyro developer (formula for which is given in Volume II), unless the plate is very much over-timed, when it should be transferred to a tray of old developer, but never develop for contrast, as flatness is one of the essentials of fuzzy photographs.

649. Use Platinum or Velox paper, print to a good depth, and you will have a perfect blending of color from a deep black to beautiful gray in the middle tones and soft transparent whites, producing that beautiful half-tone effect so much desired.

650. In choosing these views avoid prominent or massive architecture. Flat scenes are the best, and out in the open country you will find them, along the hedges, or old rustic places with perhaps a church spire in the distance, or even an old barn or farm cottage. Very little life must be shown, and that in a suggestive way only. See studies of fuzzy pictures in this volume.

651. **Moonlight Effects.**—Moonlight effects are best rendered from negatives made in broad daylight. You will need your ordinary camera and lens, a very rapid shutter, and a few non-halation plates. A ray filter is often very useful. Remember, in using these filters or screens, considerably more time must be given, as the yellow color in the screen slows the light.

652. Desirable cloud and shadow effects can be obtained without the filter by careful exposure and development. We advise non-halation plates, as with the camera facing the sun, fogging from over-exposure is less likely to occur.

653. Choose a water scene by seashore, lake, or stream, as the sun's reflection, glint and delicate catchlights on the water add much to the picture.

654. Again, early morning or evening is best, as the

sun is low and directly facing you at this time. An approaching thunder-storm offers a splendid opportunity, as does a sky covered with bright fleecy clouds. For an example of moonlight effects see Illustration No. 47, page 228.

655. Having adjusted the view on the ground-glass, focus on the clouds and do not stop down too much, as a foreground too sharp tends to spoil the night effect. Wait until the sun begins to disappear behind a cloud or mountain, then expose very rapidly, say 1-100 of a second. With a slow shutter working at perhaps 1-25 of a second you may stop down a little more so not to over-time, as too much time will ruin the detail in sky, and a negative slightly under-timed will give best results.

656. When developing, if you have followed instructions, you will know the plate is under-timed and can develop it accordingly. Do not weaken the developer too much by the addition of water, for while your developer must be weak do not over-do it, else you will produce a flat plate, which would be of no use for this purpose. Rather, if necessary, use a drop or two of bromide to hold the detail in the sky and prevent fogging.

657. This can best be done by using a tuft of cotton, saturated in a weak solution of bromide. This should be applied only to the dark clouds in the sky, or the foreground of the plate, and such other portions as may develop too flat or dense or with too much detail.

658. The use of bromide on an under-timed exposure would be contrary to the usual rule in developing, but in this case little or no detail is wanted in the shadows, else the results would be the same as an ordinary under-timed daylight exposure. Hence the use of bromide to add to the night effect, by securing detail in the sky and clouds and obliterating it in the foreground, which is in deep shadow except for the light glints on the water.

659. **Additional Methods for Securing Fuzzy Pictures.** —If it is desired to secure an even diffusion throughout the entire picture space, from negatives which are perfectly sharp, a sheet of clear celluloid or cellulose and transparent

SPRING

By Wm. H. Phillips

Study No. 44—See Page 508

THE ROAD IN THE SAND

Study No. 45—See Page 309 By Geo. H. Scheer, M. D.

tissue paper, should be interposed between the negative and printing paper. The tissue paper should be in contact or next to the film of the negative, between it and the printing paper. The use of the tissue paper necessarily increases the amount of exposure that will have to be given the sensitive paper, and this must be reckoned with especially when printing on developing papers.

660. When the enlarging process is resorted to, the image should be thrown onto the screen, and after securing perfectly sharp focus move the lens a trifle nearer the negative, and thus obtain diffusion. Enlarging through bolting cloth will also give practically any degree of diffusion, all depending upon the distance the bolting cloth is placed from the bromide paper.

661. If it is desired to secure this diffusion in the original negative, the most artistic and true-to-nature effects will be obtained by sharply focusing upon the immediate foreground and making the exposure with the lens wide open. Prints from such negatives should be made on rough paper.

662. **Caution.**—Bear in mind negatives for fuzzy prints should be slightly over-exposed and developed for flatness rather than contrast. Start these in normal developer, and if they are well timed and show a tendency to fog or go a little flat, transfer to a tray of old developer.

663. You will rarely need to use bromide for such negatives, but if they are much over-timed a few drops may be added to your tray of old developer.

664. Carry these over-timed negatives to a good strength, even to over-developing, as the development of no plate should be stopped until the plate shows contrast sufficient to produce the quality of print you have in view.

665. If, after fixing, you find your plate too thick and dense, reduce with persulphate of ammonia, which, as it acts upon the highlights principally, will not increase the contrast of your plate, but slightly soften it. As softness is one chief essential for fuzzy pictures always use persulphate in reducing such plates, following instructions on Reducing in Volume II.

## CHAPTER XXV.

### PIN-HOLE PHOTOGRAPHY.

666. That a high-grade lens is a great addition to any photographic worker's outfit is beyond question. It is not the purpose of this chapter to discourage anyone's ambition to some day become the proud owner of an "anastigmat." It is possible, however, to make photographs of unquestionable quality without employing a lens at all; and with but three exceptions, produce negatives equal to those secured with an optical instrument.

667. The pin-hole, as a substitute for the lens, possesses the undoubted merit of cheapness. For experiments it is possible to stretch a piece of black paper, from a spool of roll film, across the opening of an extra lens board, and with the hot point of a needle burn a tiny hole in the center. This hole may then be enlarged to the full diameter of the needle by gradually working the needle into it, rotating it between the finger and thumb in drill fashion. The cost of material is limited to one needle and five minutes' time—the cost of the black paper need not be taken into consideration, as it is a by-product.

668. The use of a pin-hole requires many times the amount of exposure to that of a lens. It must be borne in mind that the diaphragm value is almost the same, however, as if this same small opening were used on the lens. But, owing to the fact that there is no glass to retard the rays of light and cause cross reflections, a quicker exposure is possible than if the same size opening were employed when using a lens.

669. The most minute pin-hole will give a remarkably sharp image. As the size of the hole is increased the bril-

liancy fades, the image becomes "fuzzy," until, when the opening has been increased to quarter of an inch in diameter, there will be no recognizable image. Here is where the lens scores its strongest point. The optician can grind the glass and combine the various forms of lens cells to control the rays of light, making it possible to employ a large opening, and to produce a sharp image by admitting a great number of light rays instead of only a few, as is the case when working with the pin-hole.

670. It is a well-known fact that the larger the opening of the lens the less is the depth of focus. When a large opening is used the ground-glass cannot be moved as far forward and backward, without a single object becoming unsharp, as when employing a small opening or diaphragm. When a very small diaphragm is used almost the whole field covered by the lens (objects in the extreme distance and those within a few feet of the camera) is sharp. When using the pin-hole no object is out of focus (unsharp).

671. It is not possible to photograph moving objects when working with a pin-hole. At first thought, it might seem equally impossible to make a view of a busy street, or to secure a good landscape negative when the wind is blowing. It is right here, however, that the pin-hole will accomplish results that can seldom be obtained with a lens. For street photography the pin-hole has many advantages, but for the present it is sufficient to say that after having given from two to five minutes' exposure only those objects that have remained perfectly still during this time will have made any visible impression upon the sensitive plate. The people, cars, teams, carriages, automobiles, etc., which have been moving around in the meantime will not only leave no outline, but there will be no blur caused by them. The developed negative will show the buildings and all stationary objects in perfect form, while the moving objects will have entirely disappeared. When wind causes a movement of the trees in a landscape scene, the point at which the branches remain the longest time will produce the image and there will be no blur.

NEEDLE-HOLE LANDSCAPE

STUDY NO. 46—See Page 315 BY G. H. PAINE

OCTOBER DAY (PINHOLE)

STUDY No. 47—See Page 315 BY C. F. CLARK

672. The three exceptions referred to in the first paragraph of this chapter having now been explained, they may be briefly summarized as follows: First, as the pin-hole requires from 60 to 100 times the amount of exposure of the average lens, it is impossible to use the pin-hole when one's time is valuable and when a hasty exposure must be made. Second, the definition is very uniform throughout the picture, for all objects, whether near or distant, are equally lacking in perfect definition. A general criticism, passed by artists, is that this definition is too uniform. Third, owing to length of the exposure it is impossible to photograph moving objects.

673. Though the pin-hole is of somewhat limited application, it should certainly be tried by the pictorial worker for certain effects, and it will prove useful to the technician for securing extremely wide-angled views in restricted positions.

674. A pin-hole has no focus—it may be placed at practically any distance from the lens—all that is necessary is to rack the camera until the desired angle of view is reached. It is necessary, however, to select a pin-hole of a size suitable to the camera extension. The greater the distance from the pin-hole to the plate the larger may be the pin-hole. If the distance is sixteen inches, the pin-hole should be about 1-12 of an inch in diameter. At a distance of ten inches, a hole 1-40th of an inch is correct; while for six inches, the pin-hole may be 1-50th of an inch. These sizes and distances are quite correct for the best definition, and are proper no matter what size of plate is employed. In order that these diameters may be accurately judged, various sizes of needles are employed. These are gauged by the needle manufacturers and the sizes are standard. Although the hole is made with a needle instead of a pin, the method is known as pin-hole photography, and it will probably continue to be known by this name.

675. **Making the Pin-Hole.**—To make a pin-hole, take a piece of very thin brass, or other metal, or even tough

black paper. Take a wire nail and place it in the center of the brass, and strike with a hammer. A depression will be made on one side. With a fine file rub on the raised portion until a very minute hole appears, and then push a needle through a little way. Withdraw the needle and file the rough edges. Again insert the needle and draw it back and forth, carefully, and upon removing it file until the edge of the hole is perfectly smooth. *It is absolutely essential that the hole be perfectly round, thin and sharp.* Especially is this necessary when extreme wide-angle pictures are to be made. The use of a magnifying glass will greatly assist in securing a perfectly formed, smooth-edged pin-hole. In order that the exposure may be determined exactly, *it is essential that the needle fit the hole perfectly,* not too tightly—so it will be possible to move the needle backward and forward without any side play.

676. **Blackening the Brass.**—All reflection must be avoided; therefore, it is necessary to blacken the brass. The portions that have been filed would render the pin-hole useless if left bright. The best method to employ is one that will not clog the hole, and this is accomplished by holding the brass in the fumes of burning rock sulphur.

677. **Placing the Pin-Hole in Position.**—The pin-hole is placed where the lens should be. An extra lens board may be employed. The pin-hole, whether of brass, paper, or other material, is fastened so that the hole will be in the center of the camera front. Care must be taken that no light enters the camera other than that coming through the pin-hole.

678. **Size of Needles.**—The most useful sizes of needles are numbers 8, 10, 11 and 12, which give a variation in the size of the hole from 1-35th to 1-75th of an inch. The number 8 is useful for 5 x 7 or larger plates, but will give too much diffusion for smaller sizes. With 4 x 5 negatives, the number 10 is the most useful for all-round work. The numbers 11 and 12 will give still sharper definition, but require a correspondingly greater amount of exposure.

**Practice Work.**

679. **Composing the View on Ground-glass.**—It is necessary to have some means of composing the picture on the ground-glass, but the amount of light passed through the holes, previously recommended, is too small to allow of the image being clearly seen. There are four methods of accomplishing this, any one of which will give satisfactory results. *First*, the image may be clearly seen on the ground-glass by constructing a larger aperture, about 1-16 of an inch in diameter.

680. The *second* method is to fix a pin in the lens board, directly over the pin-hole, and two pins at the edges of the ground-glass in the panel at the rear of the camera; then stretch an elastic band on these three pins. By looking along the line of the elastic from one of the back pins to the front pin, and on out into the view, all objects along this line will be included in the picture. Of course it is necessary to then look along the line formed by the other back pin and the front pin, in order to obtain the other boundary of the view—all objects between these two boundary lines will be included on the ground-glass.

681. *Third*, if the angle of view included by any lens, or combination of lenses, which you might have, is considered satisfactory, it is possible to overcome the difficulty of arranging the subject on the ground-glass by focusing with such a lens, and then substituting for it the pin-hole. The amount of view on the negative will be practically the same as that projected on the ground-glass by the lens. A pin-hole placed the same distance from the ground-glass as the focal length of a certain lens will give the same angle of view as that lens.

682. The *fourth* and simplest method of overcoming this difficulty is the use of a direct vision view-finder, as large as possible, and so arranged that any raising of the front also raises the wire frame of the finder, in order that the amount of rise may be automatically shown.

683. **Angle of View.**—The extreme width of angle

which may be obtained with a pin-hole renders its aid very valuable when working in confined situations. With a very carefully made pin-hole it is possible to produce a much wider angle of view than could be secured with the majority of the wide-angle lenses on the market. It is, however, very important to have the edge of the pin-hole perfectly clean and smooth, and if the angle is extremely wide, the cleaner and thinner the edge, the better and more evenly illuminated will be the result. For pictorial work a wide angle is *not* recommended; in fact a very narrow angle will give far better results—one of about 30 degrees. The wide angle will prove of value for record work and producing photographs, in very restricted areas, required for commercial purposes.

684. The nearer the pin-hole is to the plate the wider is the angle of view, and the shorter is the exposure required. With the ordinary rectilinear lens, when taking a distant object, it is necessary to work practically at one distance only from the plate, whereas with one and the same pin-hole it is possible to work at any distance from the plate. For example, a number 10 hole will cover a 5 x 7 plate, at one and a half inches distance. This gives an angle of view of about 128 degrees, but at whatever distance the pin-hole is from the plate the image is *equally in focus*. Of course the further the pin-hole is from the ground-glass the less will be the angle of view. These are facts of great importance, as the one pin-hole supplies the place of a whole battery of lenses.

685. **Exposure.**—There are two principal methods employed for ascertaining the required exposure for pin-holes of various sizes, and for the various distances between the pin-hole and ground-glass. One method is to give the pin-hole number 8 a factor of 7, say f/7, if the camera extension is one inch. If the camera extension is doubled (two inches) this factor is doubled—f/14. If the extension is three inches the factor will be f/21. Whatever the number of inches of extension the factor is found by multiplying the number of inches by f/7. If using the Watkin's Exposure Meter, whatever time it gives in seconds, use minutes. As an example,

say we are working at f/14, and the meter gives six seconds, then expose for six minutes. If you do not employ an exposure meter to judge your exposures with a lens, take the number of seconds, or fraction of seconds, you would give with the lens at a particular diaphragm value and use this in minutes for your pin-hole exposures. Remember, however, that it is necessary to take into consideration the *f* values at all times.

686. A second method is worked out on a different basis and involves a little mathematical calculation, but when the principle is once understood it will be found to be extremely practical and very accurate. The method is simplified by certain ascertained factors:

For a No. 8 hole the factor is 32,

For a No. 10 hole the factor is 55,

For a No. 12 hole the factor is 90.

Take the exposure you would give if you were using your lens at f/8, multiply it by the factor for the size needle-hole you are using, and again multiply the result by the square of the number of inches between the hole and the plate. For example, with a number 8 hole, and the distance 6 inches, and a lens exposure at f/8, of say ½ second, multiply 32 (the factor for pin-hole number 8) by ½ (the exposure for f/8), and the result is 16; multiply this (16) by the square of 6 (the distance between pin-hole and plate)—the square of 6 is 6 x 6, or 36—and the result is 576, which is the number of seconds exposure required. To reduce this to minutes, divide 576 by 60 (the number of seconds in a minute), and the exposure will be a very little over 9½ minutes. (9 minutes, 36 seconds.)

687. **Development.**—The development of a pin-hole negative is exactly the same as for any other negative.

688. **Paper to Use.**—*The surface of the paper* on which the final prints are made is a matter which requires some consideration. Where there is no sharpness there is no advantage in printing on glossy paper, and even in cases where the photograph only possesses commercial value, the effect will be better if a smooth matt surface, such as plat-

inotype or matt bromide, is used. For pictorial effect such surfaces as that of the CC platinotype and the rough developing and bromide papers are most suitable, and the character of the definition is distinctly pleasing.

689. **Accomplishments of the Pin-Hole.**—The pin-hole will never replace the lens, but it will do many things that the lens will do and some things the lens cannot do. Every straight line will be quite true, if you will use the same precautions as when working with a lens, and the pin-hole will give everything required. The following covers very well the pin-hole's accomplishments:

(1) Rectilinear results;
(2) Truthfulness to nature;
(3) Wide or narrow angle (same pin-hole);
(4) Telephoto or panoramic (same pin-hole);
(5) Depth of focus;
(6) Sense of atmosphere and correct impression of distance, and altogether a nice artistic softness characterizes the results. No focusing is required, as objects are always in focus, no matter how far or how short the camera may be racked out.

690. The pin-hole appeals to two classes of workers in particular. First, to the art photographer on account of the softness and diffusion of definition which the pin-hole gives; and second, to those not over-burdened with dollars and cents, who cannot purchase expensive apparatus.

Illustration No. 50

691. **The Pin-Hole Lens.**—This is a device so constructed that it will fit any lens flange and, when properly adjusted, converts the camera to which it is applied into a

pin-hole camera. The pin-hole lens can be purchased from any photographic dealer, but it does not have the efficiency of the regular pin-hole, for, as previously stated, the glass of the lens retards the rays of light, thus increasing the exposure to a certain extent. For wide-angle work it is impossible to work at an angle over 95 degrees. The results are better and it is by all means cheaper to make your own pin-hole and use it without any lens whatsoever. (See Illustration No. 50.)

692. **Final Cautions.**—Remember, for the best results it is necessary that the material used in making the pin-hole should be very thin and absolutely opaque. The hole must be perfectly smooth and round. Give enough exposure. If six minutes are required, no harm will be done if you give seven, as you will be giving only 1-6 more time. The size of the pin-hole depends greatly upon the distance the pin-hole is from the plate; the shorter this distance the smaller may be the hole. The greater the distance with the same size hole, the more exposure will be required. When making prints from pin-hole negatives, do not use a glossy or too smooth a paper; the greater the diffusion the rougher should be the paper. Make proof prints from all negatives and file in your proof file for future reference.

THE MEADOW ROAD

STUDY No. 48—See Page 312 BY J. R. PETERSON

## CHAPTER XXVI.

### HOW THE STUDIES ILLUSTRATING THIS VOLUME WERE MADE.

Study No. 2. Title, "An October Morning," by Sweet Brothers, Minneapolis, Minn. This picture was made at 7:30 a. m. in a very heavy frost. The lens used was a Zeiss, stopped down to F. 8; plate used, a Double Coated Orthonon; exposure given, 1/8 second; developed with eikonogen-hydroquinon, with no after treatment. (See Page 26.)

Study No. 7. Title, "A Corner in the Piazetti" in Venice, by Wm. H. Phillips, Liverpool, Ohio. The camera used was a No. 3 Folding Pocket Kodak Camera attached to a tripod. The lens used was a Goerz, Series 3, 5 inch focus. The weather was cloudy, and there were people constantly passing by. To avoid the figures appearing in the picture I was compelled to close the shutter many times. In consequence, this picture has received about 50 exposures of 1-100 part of a second each. The total time for completing these exposures was about five minutes. Care was taken that no consecutive exposure was given having any person standing in the same place. Consequently, the picture was made without figures in the view. The negative was made on a non-curling film, developed with pyro, with no altering in the development. The film was enlarged, and the prints were made on Royal Bromide paper, 11 x 14 inches; developed with rodinal strong solution—one part rodinal, 6 parts water. (See Page 52.)

Study No. 1. Title, "Souvenir de Petit Trianon," in Versailles, Paris, by Wm. H. Phillips, Liverpool, Ohio. The camera used in making this picture was a No. 3 Folding

Pocket; the lens was a Goerz 5 inch focus, Series 3; negative was made on non-curling film, developed in pyro-soda developer. The print was made on Royal Bromide enlargement 11 x 14 inches, developed with rodinal strong solution —one part rodinal, 6 parts water. The print was mounted with white margin on chocolate mount. (See Page 25.)

Study No. 16. Title, "Street in Old Japan," by Wm. H. Phillips, Liverpool, Ohio. The camera used was a No. 3 Folding Pocket Kodak; lens, a Goerz 5 inch focus, Series 3; negative was made on non-curling film; developed with pyro-developer, with no after manipulation. Print was enlarged to 8 x 10 on Royal Bromide, developed with rodinal strong solution—one part rodinal, 6 parts water. (See Page 145.)

Study No. 44. Title, "Spring," by Wm. H. Phillips, Liverpool, Ohio. The camera used was a No. 3 Folding Pocket Kodak; lens used was a Goerz 5 inch focus, Series 3; negative was made on non-curling film; developed with pyro-soda developer. Print was made on Royal Bromide enlargement to 11 x 14 inches; developed with rodinal strong solution—one part rodinal, 6 parts water. (See Page 289.)

Study No. 13. Title, "Calling the Ferryman," by Mrs. Nancy F. Cones, Covington, Ky. The weather conditions in making this picture were slightly cloudy. The exposure was made at 10 a. m.; lens used was a Bausch & Lomb Rapid Rectilinear; stop used, 32; exposure given, 1 second; film used, Eastman non-curling; developed with metol-quinol developer, with no after manipulation. The printing process was Aristo Platino, sepia tone, mounted on sepia mount. (See Page 130.)

Study No. 28. Title, "Moonlight on the Mississippi," by R. E. Weeks, Chicago, Ill. This picture was hung at the Royal London and First American Salons. The weather conditions when making this picture were bright. The exposure was made at 5:30 p. m.; lens used was the regular equipment of a Bull's Eye camera, open stop; exposure, instantaneous; negative was made on an Eastman film, developed with hydroquinon-metol. The diffused focus was obtained by printing through bolting cloth; printing process, sepia

on Royal Bromide, enlargement from a 3½ x 3½ film; toned in alum hypo bath. Print was mounted on a sepia colored mount. (See Page 227.)

Study No. 45. Title, "The Road in the Sand," by Geo. H. Scheer, M. D., Sheboygan, Wis. This picture, exhibited at the Third American Salon, was made on a bright cloudy day, about 2:30 p. m., in the month of October. The lens used was a Rapid Rectilinear, full aperture; plate used was a Cramer Medium Isochromatic; exposure given, ½ second, with a B. & J. Ideal ray filter. The plate was developed in a dilute pyro-soda developer, enlarged from an undoctored negative on Royal Bromide paper—the sky portion receiving a slightly longer exposure than the foreground,—and redeveloped in sodium sulphide. (See Page 290.)

Study No. 12. Title, "Pleasures Under Summer Skies," by Wm. T. Knox, New York, N. Y. This picture was made in very bright sunlight; exposure was made in the morning; the lens used was a Plastigmat; focal length, 8½ inches; stop used, No. 8; exposure given, 1-50 of a second; plate used was a Cramer Instantaneous Isochromatic; developed in pyro-acetone. Diffusion was obtained in the focusing. Printing process, sepia Platinum, mounted on a combination mount, first section, deep brown, second section, salmon color. (See Page 129.)

Study No. 14. Title, "Fairy Tales," by Edmond L. Sanderson, Waltham, Mass. The weather conditions when making this picture were cloudy, but a good, bright light prevailed. Exposure was made at 2 p. m.; lens used was a rectilinear of a 6½ inch focus; stop used, U. S. No. 8. The negative was made on a 4 x 5 film pack; exposure given, about 2 seconds, with a bulb; the film was developed with ortol, with no alteration after development. The film was after enlarged on bromide. My present practice is to make a positive, either on a contrasty plate or a rapid plate. The former is used for flat negatives and the latter for harsh ones. I then make my enlarged negative usually of 5 x 7 size, and produce contact prints with paper that seems most

suitable. The print was mounted on carbon black mount. (See Page 139.)

Study No. 8. Title, "Day is Far Spent," by C. F. Clarke, Springfield, Mass. This picture was hung in the Third American Salon, also in Paris, at the Salon Club exhibitions during 1906. The picture was made at 4:30 p. m., in the month of October, the day being quite cloudy. The lens used was a Goerz No. 3, 9 inch focus; stop used, U. S. No. 4; exposure given, 6 seconds, with a screen; the plate used was an Orthonon; developed in ortol, with no after manipulation. (See Page 71.)

Study No. 9. Title, "The Bridge," by J. H. Field, Berlin, Wis. The exposure was made at 6 a. m., on a misty day. The lens used was a rapid rectilinear 5 x 7, of an 8 inch focal length; stop used, wide open; the exposure given was 1 second, and the plate used was a medium Isochromatic, developed in pyro-acetone, *tank development.* The printing process was Willis & Clements Platinum, black and white, and mounted on a combination mount of steel gray, followed by Scotch gray. (See Page 91.)

Study No. 17. Title, "The Man on the Box," by Dr. A. R. Benedict, Montclair, N. J. This picture was made on a rainy day, at 2 p. m. The lens used was a rapid rectilinear; focal length, 6½ inches; stop used, U. S. No. 8; exposure given, ½ second. Negative was made on an Eastman film; developed with metol-hydroquinon, with no after manipulation. The printing process was an enlargement on Standard Bromide. A tripod was used in making the exposure, and the exposure of the film was as nearly perfect as possible. (See Page 146.)

Study No. 43. Title, "A Dull October Day," by John Chislett, Indianapolis, Ind. Print was made at 4:30 p. m., with a Smith lens, very slightly stopped down. The plate used was a Cramer Instantaneous Isochromatic; exposure given was 2 seconds; developer, ortol. There was no altering of the negative, or manipulation after development. Print was made on platinum paper, with the foreground darkened in the printing, and a sky printed in from a separate nega-

tive. The print was mounted on a steel gray mount. (See Page 284.)

Study No. 21. Title, "Departing Day," by Geo. H. Scheer, M. D., Sheboygan, Wis. This picture was made on a bright day, with the sky streaked with black clouds. The picture was made at sunset in the month of July. The lens used was a rapid rectilinear, worked with an open stop; plate used was an Orthonon; exposure given 2 to 3 seconds, with a B. & J. Ideal ray filter. The plate was developed by tank development, and 25 minute pyro formula used. The print submitted is an enlargement, and was made from an altered negative and enlarged on Platinoid Bromide, shaded during exposure to give the sky portion all the way from two to four times more exposure than the foreground, the top portion, of course, receiving the longest exposure. The print was redeveloped with sodium sulphide. (See Page 198.)

Study No. 15. Title, "The Edge of the Cliff," by Myra A. Wiggins, Toppenish, Wash. This picture was hung in the Paris Salon of 1904, and has received other important prizes: the grand prize of $100, by the Youth's Companion Publishing Company, of Boston, and the first prize of $150 in the Bausch & Lomb contest for genre subjects. The weather was quite cloudy, and exposure was made late in the afternoon. The lens used was a Bausch & Lomb, with an open diaphragm. For exposure a cap was used, and made as quickly as the lens could be covered and uncovered. The plate used was a Cramer Medium Isochromatic; developer used was pyro, and the plate was controlled entirely in the developing, with no after manipulation. The print was made on a sepia platinum parchment. (See Page 140.)

Study No. 10. Title "August Showers," by Dr. A. R. Benedict, Montclair, N. J. This picture was made at 4 p. m., on a day when it was raining "cats and dogs." The lens used was a rapid rectilinear; focal length, 6½ inches; stop used, U. S. No. 4; exposure given, 1-25 of a second. Negative was made on an Eastman film, developed with metol-hydroquinon. Printing process, enlargement on Standard Bromide from a 3¼ x 5½ film. (See Page 111.)

Study No. 48. Title, "The Meadow Road," by J. R. Peterson, Portland, Ore. This picture was accepted and hung at the Third American Salon. The exposure was made at 6 a. m. in the month of August, on a bright, clear day. The lens used was a Plastigmat; focal length, 9 inches; stop used, U. S. No. 8; exposure given, ½ second. The plate used was a 5 x 7 Orthonon, developed with rodinal. Printing process, Eastman sepia paper. The negative was enlarged to 8 x 10; the clouds were worked in in the printing from a new negative. The picture was mounted on a combination mount—first section black border, followed with an ash gray mount. (See Page 306.)

Study No. 36. Title, "Hillside Path," by Wm. T. Knox, New York, N. Y. The exposure was made at 11 a. m., on a bright day. The lens used was a Zeiss; focal length, 12¾ inches; stop used, No. 4; exposure given was 1 second; the plate used was a Cramer Isochromatic, developed in pyro; diffusion was obtained in exposure. Printing process, platinum; mounted on a combination mount—first section Scotch gray; second section carbon black, with the final support of dark gray. (See Page 258.)

Study No. 11. Title, "Fast Falls the Eventide," by Geo. H. Paine, Providence, R. I. The weather was quite clear with a few clouds near the horizon. The picture was made late in the afternoon, in the month of October. The lens used was a rapid rectilinear; focal length, 13½ inches; stop used, U. S. No. 8; exposure given, ¼ second; plate used, Seed 27; developer, pyro. Printing process, Nepera Velox paper. The clouds in the picture were all in the negative, but were strengthened from the back of the negative, as were also the highlights over the trees. (See Page 112.)

Study No. 18. Title, "Snow Scene," by W. A. Wilson, Nampa, Idaho. The weather was cloudy; the exposure was made at 11 a. m.; the camera used was an Eastman Folding Pocket No. 4; negative was made on an N. C. film. Printing process, Aristo Platino. (See Page 189.)

Study No. 19. Title, "Street Scene—Winter," by John S. Neary, Trenton, N. J. This picture was taken at 1 p. m.;

camera used was an Eastman Pocket Kodak, size 2½ x 4¼; weather conditions, snowing very hard. Film was developed with pyro, and enlargement made on Bromide paper; mounted on carbon black mount. (See Page 190.)

Study No. 20. Title, "The Dreary Road," by C. F. Clark, Springfield, Mass. This picture was made at 3:30 p. m., in the month of January, light very bright. The lens used was a Goerz, 9 inch focal length; stop used, U. S. 4; exposure given, 3 seconds, with a very deep screen; plate used, Orthonon; developer, ortol. The development was made without alteration, intensifying or reducing. The print was made on Platinum paper, and mounted on carbon black. (See Page 197.)

Study No. 22. Title, "The Wave," by J. R. Peterson, Portland, Ore. This picture was accepted and hung at the Third American Salon. Weather conditions, a clearing storm, with dull light; exposure was made at 10 a. m., in the month of May; the lens used was the rear combination of a Plastigmat; focal length, 18 inches; stop used, 5 x 7 open; exposure given, 1-25 of a second; plate used, 5 x 7 Orthonon; developer, rodinal; printing process, carbon. This negative was worked on by making positives and negatives, to increase contrast and to print in the sky, and afterwards the picture was enlarged to 8 x 10. Picture is mounted on carbon black mount. (See Page 205.)

Study No. 23. Title "All Aboard," by Wm. T. Knox. New York, N. Y. Exposure was made in the forenoon of a bright day, with light clouds. The lens used was a rapid rectilinear, fitted to a Premo film pack camera; negative was made on film, and developed in pyro. The diffusion was obtained in the enlargement. Print was mounted on gray card. (See Page 206.)

Study No. 24. Title, "Oyster Boat," taken in New York Harbor, from ferryboat, by Dr. A. R. Benedict, Montclair, N. J. This picture was made at 4:30 p. m., on a clear day, with light clouds; the lens used was a rapid rectilinear; focal length, 6½ inches; stop used, U. S. 4. Negative was made on an Eastman film, developed with metol, with no

after manipulation; printing process, bromide enlargement (used Standard Bromide). The print was enlarged with a white margin, mounted on black card. (See Page 209.)

Study No. 27. Title, "Boats Near Venice," by Wm. H. Phillips, Liverpool, Ohio. The camera used in making this exposure was a No. 3 Folding Pocket Kodak, fitted with a Goerz lens, Series 3, of a 5 inch focus. The negative was made on non-curling film, developed with pyro-soda. The print was enlarged from the film on Rough Royal Bromide 8 x 12 inches, developed with rodinal strong solution, one part rodinal, 6 parts water. (See Page 214.)

Study No. 29. Title, "Blossoms" (Cherokee roses), by Mrs. M. S. Gaines, Mobile, Ala. The exposure was made at home, at 9 a. m.; the lens used was a Plastigmat; stop used, F. 32; exposure given, 2 seconds; plate used, Hammer; developed in metol. Printing process, gum bichromate, on rough surface paper. Mount, cream with a line. (See Page 241.)

Study No. 32. Title, "Chrysanthemums," by Dr. A. R. Benedict, Montclair, N. J. Exposure was made in the home, at noon of a clear day, with a rapid rectilinear lens; focal length, 6½ inches; stop used, U. S. 16; exposure given, ½ minute. Negative was made on an Eastman film, developed with metol. Printing process, direct print on Platinum paper. This picture was taken indoors, near a window, with a 3-A Folding Pocket kodak, with portrait attachment. Picture was mounted on salmon color mount. (See Page 248.)

Study No. 33. Title, "Water Lilies," by Mrs. M. S. Gaines, Mobile, Ala. Exposure was made at 8 a. m., on a fair day; lens used, Plastigmat; stop used, F. 16; exposure given, 1 minute; plate used was a Hammer Regular, developed with rodinal—no alteration of the plate after development. The diffused effect was obtained in the printing. The printing process was gum bichromate on very rough paper. The picture was mounted on a combination mount, first section, ordinary strawboard paper; second section, a delicate green tint cardboard. This picture was reproduced exactly as seen where the flowers grew in a deeply shaded pool. The wind

swaying the over-hanging branches permitted the sunshine to strike one flower only, leaving the others in shadow. (See Page 251.)

Study No. 46. Title, "Needle-hole Landscape," by G. H. Paine, Providence, R. I. This picture was made at 1 p. m., on a clear day; lens used was a home made needle-hole No. 10 in brass plate; focal length, 10 inches; exposure given, 7 minutes; plate used, Seed 27 Gilt Edge; developed in pyro. The negative was slightly locally reduced in one or two places with cotton and alcohol. Printing process, Nepera black. (See Page 295.)

Study No. 47. Title, "October Day," (pin-hole picture), by C. F. Clarke, Springfield, Mass. This picture was taken at 10 a. m., on a bright day, in the month of October; lens used was a McCorkle pin-hole attachment; focal length, 6 inch bellows; stop used, No. 10 needle hole; exposure given, 2 minutes; plate used, Orthonon; developed in ortol, with no after manipulation. (See Page 296.)

## CHAPTER XXVII.

### HOW TO UNDERSTAND AND ENJOY THE STUDIES ILLUSTRATING THIS VOLUME.

Pictures, books and music all have charms to soothe and help one to forget the worriments and cares of life. People with different temperaments take to one or the other of these, accordingly as their tastes run to literature, art, or music. One of the leading art critics of the country says: "You must look at pictures studiously, earnestly, honestly. It will take years before you can come to a full appreciation of art; but when at last you have it, you will be possessed of one of the purest, loftiest and most ennobling pleasures that the civilized world can offer you."

Good photographs, like good people, have individual character and charm. In analyzing pictures, the purpose should be to increase our understanding and appreciation of what is admirable in them. The structural lines enclosing the areas and the beautifully proportioned parts of light and dark, form the elements of beauty in most pictures. Just as one needs to cultivate a good literary taste to rightly appreciate fine literature, so also should you have the right ideals of art to properly enjoy pictures. The province of all picture study is to lead one to discover the application and use of art principles. These things do not simply happen in the picture, the artist aims consciously to produce beauty. The balance of the parts, the beauty of the light and dark masses, the rythmic lines and the blending of all these in harmony, are planned to give us a sense of ideal beauty. In all pictorial expression, besides light and shade and arrangement, the underlying principles of perspective and the fore-

shortening of objects must be understood by the artist, to make the leading lines of his picture correct. Ruskin says: "The greatest thing a human soul ever does in this world is to see something and tell what it saw in a plain way. Hundreds of people can talk for one who can think; but thousands can think for one who can see. To see clearly is prophecy, poetry and religion—all in one."

In Study No. 6, we have a fine example of a typical middle-class home, such as will be found in the suburbs of our American cities. Its over-lying eaves and dormer windows suggest the Swiss chalet and its style may be characterized as Swiss-American. The presence of severe simplicity, together with a fine suggestion of atmospheric effect from the clouds, impart a subtle charm to the lines of the house which are very pleasing. With the single exception of the porch window there is not a curved line in the building. The photographer realizing this fact, no doubt, has given us a perspective on the front and side elevations which emphasizes its best proportions and leaves but little for the imagination to supply. A building like this, designed entirely by one man and forming a complete work in itself, is necessarily created with the idea that it will be seen from certain probable and particular standpoints. The photographer has chosen, undoubtedly, the correct point of view—since there is perfect symmetry in it. The predominating feature being the porch, he has directed attention to it by placing it in the foreground of his picture. (See Page 48.)

The value of the foreground in work of this kind is not always rightly appreciated. Nothing is more incongruous than to see the foreground of a photograph cut off immediately in front of a vertical column or wall. In this picture the floor lines in front of the embankment, instinctively convey the sense of space and suggest that one is standing at a distance from the nearest vertical plane. Moreover, blank wall surfaces always play an important part in an architectural design. Their proportions and general arrangements often test severely even the skill of the architect. We can see that the photographer has not slighted this fea-

THE DREAMY SUSQUEHANNA

STUDY NO. 49

BY KARL M. EBERT

ture, and in order that his drawing may be correct has seen to it that all upright lines are vertical in the photograph. The lighting is good, and, on the whole, the picture is an excellent example of Architectural Photography.

In Study No. 4, we have an architectural photograph that is not only a fine record of fact, but a picture as well. The photographer has not only succeeded in interpreting the lines of this handsome residence in a truthful and intelligent manner, but has also idealized it. By securing the beauty of the surroundings, the graceful shrubbery, and an interesting sky, he has given us the building as the principal point of interest in his picture like a gem in its setting. The fundamental requirement of every architectural photograph is true and perfect perspective, which here is good. (See Page 44.)

Ordinarily nothing near the camera should be included in the composition, as distortion is likely to ensue and prove very unpleasant. The wires that cross the sky line here have been unduly magnified and are decidedly irritating. Besides being a defect in themselves, they emphasize the repetition of parallel lines in the trolley wire, the stone wall, the concrete sidewalk and the street. Unless there was a special reason for it this photograph can be much improved pictorially by eliminating the wall altogether. Then, by further trimming, obliterate the telegraph pole growing out of the inartistic structure to the left of the picture. In so doing, while you have lessened its size apparently you will not have altered the proportions, and on the whole have improved your picture fifty per cent. You will have wiped out the defects and strengthened it by concentrating interest upon the house and grounds, the principal object of interest.

In Study No. 3 is a stately building of severe simplicity, with classic lines that are chaste and very imposing. The noble portico of the front elevation with its fluted columns and pediment suggest the lines of a Greek temple. The photographer, by his skill and taste, has selected a point of view that strengthens these impressions, and one almost re-

grets that such a structure was built of wood instead of some material more enduring. The curved line of the roadway is very pleasing, and repeated from the top of the steps, doubly so, by suggestion and inference. (See Page 43.)

The foreground is sufficiently broad to emphasize the vertical columns of the portico. If there was any less, the building would appear cut off and top heavy in the photograph, which would result in want of balance and support to the composition. One serious aspect, at least, from a pictorial standpoint, is lack of sky or any suggestion of atmosphere in the picture. Pure white skies and microscopical details were accepted 20 years ago by exhibition judges as ideal pictures. Today they would not be tolerated in polite photographic society. It is wonderful what a difference in the brilliancy of the negative a ray filter or sky shade will make when judiciously used. Especially is this so when working with a lens that will cover a larger plate than the one exposed. The mouldings and projecting wood work here are not designed as mere ornaments, but rather to soften or strengthen outline, as the case may be, or to reveal structural lines in the building itself. The lighting, therefore, had to be carefully selected in order to avoid false effects in the photograph. Everything here is in harmony with one especially designed scheme of lighting, and there are no awkward cross lights in the photograph to distract the attention. Finally there is a feeling for symmetry and good balance in the composition that is very interesting, to say the least.

It is a mistake to assume that exact symmetry is inartistic. The finer the architecture the more strikingly impressive are its symmetrical proportions and lines. Being a salient feature of the construction, attention should be directed to them, by the photographer, in his picture. This the photographer, with very pleasing effect, has done in this picture. Another picture of this same residence made three years later is presented as a frontispiece. It shows a marked improvement in appearance, owing to the surroundings and cloud effects.

Study No. 5 shows an old-fashioned two story block house, plain and substantial in appearance, but with nothing of distinction about it architecturally. The photographer has given us a picture of the grounds, with the house included. The statue of the "Winged Mercury," balancing himself on his toes, and the little house in the rear, attract the most attention. The old homestead is easily a secondary interest in the picture. The sweep of roadway in front of the house carries the eye naturally into the picture to the house and helps out somewhat. In fact it is the saving quality of the picture. On the other hand, the high key of the statue, the fountain, and the little house in the rear, make them easily the central point of interest in the picture. With this divided interest it becomes confusing and lacks simplicity and unity, the basic quality of all true art. The defects would be less glaring if they were subdued to a lower key. It is a case of over-crowding the picture with detail. (See Page 47.)

There can be no objection to the statue, but it was too near the camera and therefore is magnified out of all due proportion. Furthermore, the absence of a sky and clouds destroys all suggestion of atmosphere and bars this picture from the pictorial class. It is only what it purports to be—a commercial photograph. In a work of art, these details would be supplied, plus the refined feeling that always characterizes an artistic picture. The composition may be perfect, the lines and masses may be balanced with the utmost harmony, the values may be true, but the one necessary quality to bind them all together is that fine poetic quality or feeling which always characterizes a real work of art. For art is not an affair of argument but rather of deep feeling. If you feel a picture to be wrong, it cannot be altogether right. One feels that this picture can be improved upon in the ways just indicated.

Architectural Photography is in itself a field for endless study and delight to those who have the opportunity and taste for it. By means of photography can be reproduced the greatest achievements along the lines of architec-

ture and buildings. While the artist photographer, in making a diffused focus picture, often secures a blurred image in the finished picture, the architect and draughtsman, on the other hand, demand all the details necessary for the proper presentation of the design. One is seeking to make the picture artistic by reproducing only an impression of the subject with all detail suppressed, while the other is looking for a record of fact, with every possible detail reproduced.

Study No. 2. The picture entitled "October Morning," by Sweet Brothers, of Minneapolis, is an excellent example of an artistic photograph that is not architectural. The morning mist is very interesting. The artist has made use of the people walking along the sidewalk, an electric light pole and a wagon in the street, to give proper tone and animation to his picture. In the midst of it all, like a diamond in its setting, is the outline of a noble building. Only the outline of the pediment and facade are visible in the half-tone. (See Page 26.)

The pillars stand out perfectly through the veil of mist that enfolds them, and the repetition of the vertical lines in the columns gives an impression of loftiness and dignity. By cutting off the other buildings in the street, the artist has brought out the outlines of the structure in a delightful way. While it cannot be regarded as an architectural picture, in the strict sense of the term, it is a clever bit of photographic work, to say the least, having been treated most artistically.

Holding a middle place between the sharply defined and the diffused focus picture, is the picture entitled, "A Corner in the Piazetti in Venice." (Study No. 7.) In it we have a choice bit of architectural detail that is well rendered. It represents a portion of the Doge's palace, near the Ducal staircase in the Piazetti. While the details in the stone carvings of the capitol are lost, the majestic sweep of the Gothic arches, and the rounded solidity of the columns are profoundly impressive. After reflecting upon the limitations of the camera, lens, plate and paper, we cannot but admire the cleverness of the artist in his choice of subject,

his point of view, his aerial perspective, his composition and general treatment, for the resultant picture is superb.

The Parthenon at Athens is perhaps the best example of architecture in the world today. Like the splendid creations of human genius in other lines of human endeavor, Shakespeare's "Hamlet," Leonardo da Vinci's "Last Supper," Beethoven's Ninth Symphony; the artist has sought to produce the emotion of sublimity and grandeur by his creation. In the case of the Parthenon, its great simplicity at the base, the numerous vertical lines leading the attention upwards, the decorations massed at the top, all help to carry the attention upwards and the emotion of sublimity follows. In this picture, by cutting off the irrelevant surroundings, the artist has brought out the outlines of the palace in a delightful way, and has centered the interest in the solid proportions of the colonade. At first glance, the impression is one of heavy massiveness, yet, with further study, the soaring character of the arches and the repetition of column and vertical line by the suggestion of a colonade in the upper portion of the picture give it the appearance of airiness and grace. Furthermore, by clever lighting and handling the pillars, the central points of interest stand out perfectly one beyond the other. We have gray against gray, and the secret of this sharpness and rounded fullness in the picture is due to the subtle variation in the depth of grayness which only an artist could recognize and show in his photograph. (See Page 52.)

In the "Souvenir de Petit Trianon," (Study No. 1), we have an ideal example of what an architectural photograph should be. The quaint stone house with its high pitched roof covered with thatch, its over-hanging eaves and dormer windows, is a good example of the French country house at the close of the 18th century. The aerial perspective, the first requisite in every good architectural photograph, is exceedingly good. Due regard has been given to the quality of light falling and to the diminution of the strength of light and shade of the various objects in the picture, according to their distances. Its setting is very

picturesque, in the heart of the forest, the soft foliage of the trees furnishing a beautiful background, and emphasizing the graceful lines and proportions of the building. The straight parallel lines of the roadway lead the eye naturally into the picture, ending abruptly at the further side, with the Hogarth line of beauty, a double curve, one side of which carries the eye directly to the building itself. Another curve, partially suggested in the picture, falls at the foot of a graceful winding staircase, again centering the attention upon the building. The balance of the picture is admirable, the masses of dark foliage on either side balance the lights on the house. The bit of highlight in the lower left hand corner of the picture is balanced by the patch of dark beneath the staircase. But it is the association that goes with this beautiful spot that gives it a charm and makes it deeply interesting. Here lived Marie Antoinette, the ill-fated wife of Louis the XVI., King of France, and here she came to spend perhaps the happiest days of her too short life. Disgusted with the duplicity and affectation of court life at Versailles she turned her back upon the palace and sought to lead the simple life at Trianon, which the King had built for her further back in the park. Here she came to play the part of dairymaid, feeding the hens with her own hands, milking the cows and making butter until the storm of the French Revolution broke furiously over her head and swept her to her awful fate. (See Page 25.)

In the beautiful landscape, Study No. 44, entitled "Spring," by Wm. H. Phillips we have an open space on the edge of the forest. The sun is shining through the morning mist. The feeling of the picture is one of mingled mist and sunshine. One can fancy the birds singing in the trees and all nature awakening to life. It is a delightful impression of nature and of life, in addition to being an exact photographic reproduction of the scene depicted. (See Page 289.)

Examine this print with half-closed eyes, to lose sight of the details of the picture. Note how beautifully the darks and lights blend. The soft feathery masses of the foliage make the most delicate of transitions from the deep shade

to the full sunshine and the misty haze of the distance. The slender trees rise up, in the middle distance, as if just awakening from sleep. The touches of light in the foreground probably mean blooming flowers in the grasses. It is just such a scene as one would see in early summer, and the touches of sunshine are like a dream of paradise. What the artist wants to show is the vigorous growth of the trees in response to sun and showers. The lovely play of light among the trees suggests an impulse to greet the dawn with frolic and song.

The soft masses of foliage in the print are all full of airy grace and life-like motion. Furthermore, the line of beauty indicated by the pathway in the lighted foreground is taken up by the grass and bushes and runs into the trees below the center of the picture. The whole print is full of graceful curves and soft touches of light and shade. The joy of the picture is contagious. The principle of order so essential to beauty is everywhere in evidence, and one feels that this picture is pleasant to look at, even if we do not quite understand it as we would like.

In all good composition, the artist seeks first to lead the attention by means of harmonious arrangement of contrasts and transitions of line and shadow to the center of interest in the picture. In the same way, the musical composer builds up his production about a dominant theme. The composer of literature arranges his material about a dominant incident or character in the book. In each of these arts, strength, snap and brilliancy are obtained by contrasts, while delicacy, grace and subtlety are secured by transitions, the principle of unity remaining the same in all the arts alike.

For instance, literature does not depend upon one language, nor upon one class of subjects for expression. Music is not confined to one instrument; neither is art in picture making confined to one method of expression. The artist not only must know composition, but also the action and reaction of its principles, and the more combinations he knows and can produce the greater master will he become.

In Study No. 13, "Calling the Ferryman," by Nancy Cones, of Covington, Ky., we have a landscape with figures which has all the qualities of a painting. The perspective lines of shrubbery repeated again by the reflection in the water gives a fine effect of distance. They are the structural lines and heighten the effect of mystery as to the whereabouts of the ferryman, by carrying the eye into the picture near the central point of interest. The lines also contrast with the two vertical figures in the foreground. Note the difference in the stature of the girlish figures, thus avoiding monotony and giving grace and interest to the children by transition of line. The tree in the right hand corner of the print is a decorative mass effect and keeps the eye from getting off the picture. On the whole there is something about the way in which this picture is put together that is very pleasing. There is a subtle charm about it that we cannot explain, and yet we feel it. After all is said, the artist is one who has mastered the laws of art and who works in accordance therewith, or adds thereto. But mark this significant fact, that in the great constructive arts of architecture and music, no one has yet succeeded in setting aside a single fundamental law since the day the art was first formulated. No architect has yet found a way to design a building, however novel in appearance, or beautiful in design, without any consideration of lintel, vault or pier. No composer has invented any way of composing music without regarding the melody, subject matter, development and conclusion. So also, no painter and no photographer can make an artistic picture without regard first to those laws of technic discovered, formulated and applied by the old masters, and which have been developed by observation and study. No photographer, however gifted, can be called an artist who is not master of all this and more besides. (See Page 130.)

In the picture entitled "Moonlight on the Mississippi," Study No. 28 by R. E. Weeks, we have a characteristic picture that is common enough on the inland water ways of the great middle west, and yet the picture is seldom attempted by the photographer. This particular sky is all ablaze with

light and the surface of the river is alive with rippling color. But the eye is specially attracted to the black hull of the steamboat with its smokestacks belching forth dark clouds of smoke. The direction of this smoke gives us a line in the picture that produces the effect of movement in the steamboat. It will also be noted that the movement of the boat is into the picture, not out of it. It is interesting to analyze how this sense of motion is produced. The short lines of the river banks emphasize by contrast the long lines of light shadow on the bosom of the river, sloping in the opposite direction, through all of which, whether we are conscious of it or not, we feel the pull of these lines towards the water level in the foreground of the picture. We then instinctively translate this feeling into a forward motion of the steamboat. (See Page 227.)

The patches of light in the sky, reflected and repeated in the river, are well balanced by the masses of dark on the opposite side of the picture. They also help to strengthen the effect of distance and the breadth of water spaces in the picture. The vertical lines of the steamboat stacks lead the eye upwards into the sky—and as we admire the beauties of line and color in the sunset flooding the whole scene—we cannot but feel that the artist has not only given us a picture to delight the eyes, but also has caught the spirit of this Mississippi scene, expressing his conception of it in form and color and the sweep of beautiful line in the photograph.

Study No. 45. "The Road in the Sand," by George H. Scheer, M. D., is a picture in which simplicity and masses of light and shade predominate. The picture itself is divided, like all Gaul, into three parts: Earth, sea and sky. The eye follows this rough roadway of sand naturally to the principal point of interest—the white crest of the wave just breaking on the shore. In fact, the picture consists of this patch of highlight centrally placed in a background of light gray. The sharp definition of the wave crest contrasts with the receding background and aids the suggestion of distance and atmosphere in the picture. It also demonstrates clearly that only a moderate amount of pictorial matter,

after all, is necessary to make a picture of lasting interest. In this case, the sky helps out the general sentiment of the picture, the low, subdued tones suggesting a gray day, while the clouds are useful in assisting the composition by the massing of shadows and light effects. The horizon line divides the whole area into harmoniously proportioned parts. The foreground with the sand dune and the roadway are emphasized because the author wished to make this portion of his picture more interesting. On the other hand, he has given a goodly proportion of his picture area to sea and sky space, in order that there might be a more pleasing balance to his picture. In any composition, masses of light and dark, as well as areas formed by the structural lines of the print, are always an element of beauty. This principle is charmingly illustrated in this picture, not only as to balance of parts, but also as to the beauty of the shapes or contours of light and dark masses. (See Page 290.)

Study No. 12. "Under Summer Skies," by Wm. T. Knox, is a good example of a landscape study with figures. It is not an easy thing to do. The introduction of figures gives a bit of human interest to the landscape, also an idea of the size of objects in the picture, besides filling up uninteresting spaces. The most pleasing photographs of this sort are those in which the figures appear as part of the whole landscape. In the present instance the figures appear as the object of principal interest, while the landscape serves as a beautiful setting and background. The absence of sky space is perhaps, disappointing, as it belies the title of the picture, "Under Summer Skies." One feels that more sky, with a mass of soft, rolling clouds, would make us realize the summer sunshine and frolic better. Notice how the upright figures of the children, in sharp focus, give a suggestion of distance and atmosphere to the picture. The eye rests first on the white dress of the child, then wanders on naturally to the black tree trunk that balances it, on the further side. Instinctively and quite unconsciously we measure the height of this tree by the height of the children at play, and think of it as dividing interest with the children besides being

a dominant and a very decorative adjunt to the landscape. It is curious how figures seem to fit those landscapes where the dominant object is an upright, or when placed immediately beneath the principal line. Perhaps to a painter this photograph would appear faulty because of the exaggerated size of the objects in the foreground and the excessive perspective shown in the receding surfaces of the background. But a high horizon and narrow strip of sky never look right to a painter, as they are too suggestive of a rising plane, while the photographer accepts them as instances where photography has improved upon painting. (See Page 129.)

In "Winter in the Country," by Sweet Brothers, we have a landscape in which the dominant interest is snow. Its soft white texture is emphasized by the inky blackness of the water which, by a graceful sweep of line, carries the eye into the picture to the principal point of interest. The interest here is centered in an old house set in a group of bare trees, every branch and twig of which is silhouetted up against the winter's sky. The sky is hazy and the diffused focus effect upon the house produces the effect of distance and atmosphere. True tone values often are the making of any picture and it used to be charged against photography that it was unable to render tone values truthfully; but in this landscape we really feel the quality of the snow. There is no flatness or monotony, but an agreeable alternating of light and shade that gives relief and contrast to the whole picture. Indeed it is very interesting and attractive, not only as a whole but also when analyzed into its component parts. The materials are of the simplest and it furnishes an object lesson of much real value as to the right use of material and to the correct application of the primary elements of composition. One feels that in less skilful hands this material might prove to be almost inadequate as regards the possibilities of picture making. As it stands it is an excellent rendering of an aspect of nature by photography.

In the picture entitled "Fairy Tales," by E. J. Sanderson, Study No. 14, we have an idea well expressed and an excellent example of a group picture in the open sunlight.

The absorbing interest of the young in fairy tales is well known, and this picture expresses this idea. It is not a landscape study with figures, but a study of figures with a landscape for a setting. Where the landscape is the primary motive of the picture the figures naturally should be subordinate. But in a picture like this, where the figures form the central point of interest, the relative importance of the landscape is reversed. It occupies a subordinate place in the composition and emphasis is rather given to pose, lighting and action of the figures than to the landscape. If their pose is faulty, or the grouping weak, or the lines of the composition bad, the picture is a failure. In this instance, however, the pose is easy, natural, and without affectation. The line arrangement and the grouping are good. The principal figure was first chosen by the artist and placed to the right of the center, and the remaining figures were seated in such a way that they did not interfere with the principal figures, yet were held together well in the group. It is quite a problem to compass the arranging of forms or figures in a given space. First of all, the figures should not be all of one size. There can be no interest where everything is of equal importance. There should be a variety. Contrast is always a valuable quality in art. Yet we should avoid the vulgarity of extreme contrast as well as uniformity. A mother and child are always good subjects. In this picture the two larger girls lend contrast to and balance the children. Then too, there is variety of pose in the figures that is pleasing. Moreover, in every well balanced group picture, there is some one link in the invisible chain that holds the members of the group together. The bond of interest here is the reader. One of the chief difficulties in a picture of this kind is to get rid of the idea that the figures are posing to be photographed. In this instance the photographer has caught a group of interested listeners, and that is what appeals to our sympathy. In any group, too much action is always confusing. One person may be doing something, while the others are passive observers or listeners. Again, one of the common faults in pictures of this kind is the crowding of

too many figures into the scene. No figure should be introduced unless it serves a definite purpose, and the artist should always have a reason for including it. Finally, strong sunlight with great contrast of light and shade usually gives harsh results, while what we should aim for is a soft negative with plenty of gradation and half-tone in it. We have here a picture made in soft sunlight and the different effects of light are due to the varying positions of the source of light in relation to the figures. There is good modeling and detail with gradation in the shadow portion of the negative. (See Page 139.)

The natural background here is simple and well chosen. It is out of focus so as to give relief and emphasis and not to attract attention from the principal interest of the picture; and it is also in harmony with the character and occupation of the figures. A more brilliant background would not allow the figures to come so well to the front of the picture. This is something always to be considered in a picture, and is of equal importance with figure posing and lighting.

Study No. 16, "Street in Old Japan." This picture is a study in simplicity both in choice of subject and arrangement. The structural lines of the photograph, defined by the roadway, lead the eye naturally into the picture and give it a good perspective. The central point of interest is, of course, the bend in the roadway, which by its concentrated patch of highlight fixes the attention and holds the interest of the beholder. This highlight is emphasized by the figure coming down the street which lends a bit of human interest to the scene. The lengthening out of the mount heightens the effect and stretches out the roadway very materially. While the technical quality of all this, including the lighting, is good, one may well question the wisdom of spreading out the foreground as it appears in the picture. On the whole, however, its chief charm is its extreme simplicity, its unity and breadth of treatment. (See Page 145.)

Study No. 8, "The Day is Far Spent," by C. F. Clark.

This picture shows much good taste and feeling for pictorial work. The beautiful photographic work here is largely the result of light and shade well distributed, giving breadth and interest to the picture. The highlight is in the sky and the water repeats this by reflection, while the strongest dark is in the solid patch of trees and foliage that lies between. The dark preponderating over the light gives a certain vigor and brilliancy to the composition. There is good perspective, too, and a suggestion of atmosphere from the clouds and from the ripple on the water. The horizon line is well below the middle of the picture and it exemplifies contrast, breadth, simplicity and unity. (See Page 71.)

Study No. 9, "The Bridge," by J. H. Field. Only an artist would have selected this point of view for a picture of this bridge. The abutment in the foreground being upright, vertical, emphasizes by contrast the horizontal line of the bridge span. The length of this span is emphasized by the highlight at the extreme end of the bridge, which attracts and fixes the attention. As a rule, the salient features of bridge construction are always the supports at either end. One feels that this bridge is adequately supported, even though the further support is hidden from view. The ugliness of the stone abutment in the foreground is softened, perhaps, by the overhanging vine that produces a decorative effect in the picture. (See Page 91.)

Study No. 43, "A Dull October Day," by John Chislet. This photograph is a good example of fine technical work in picture making. By using a large stop and lessening the degree of definition on the nearer parts of the picture, the artist has suggested distances. The foreground, the middle distance, the horizon line and sky, are all equally interesting and relatively distant from each other. The repetition of the sky line reflected in the water spaces below, illustrates the balance of light and shade and gives an effect of breadth to the picture. There is an agreeable absence of sharp definition that has softened the picture down without going to the extreme. (See Page 284.)

Study No. 21, "Departing Day," by George H. Scheer,

M. D. This picture gives an impressive effect of lights and darks. The source of light here is the setting sun, already sunk below the horizon. The general impression is a preponderance of darks over lights, while the strongest light is only represented by a bit of sky. The sharp juxtaposition of the extreme ends of the scale tends of course to suppress the more delicate gradations and to do away with the middle tones altogether. By trimming half an inch from the foreground one concentrates interest on the open gates over the crest of the hill, through which the sun has crowded down to rest. (See Page 198.)

Study No. 15, "The Edge of the Cliff," by Myra A. Wiggins. The object of the artist here was to pose these two figures of mother and child in a proper setting. A lens of good focal length, with a fairly large aperture was used, and chief attention was paid to the figures. The background was so arranged that its general character was indicated without any one feature standing out assertively to divide attention with the mother and child. The result is that the figures stand out in bold relief and are not confused with the background. At the same time, there is no mistaking the general character of the cliff used as a setting for the figures. The white dress of the child contrasts well and balances the dark garments of the mother. Looking into the picture one feels that there is some appreciable distance from the foreground to the vanishing point in the background. (See Page 140.)

Study No. 48, "The Meadow Road," by J. R. Peterson. This picture illustrates well the balance of mass and line with general breadth of effect. The composition, as a whole, is harmonious, though there is a tendency, perhaps, to include too many objects of interest. The upright posts are a disfigurement, and if removed would not be missed from the picture. The central point of interest is marked by the highlight at the bend in the road where it is well placed in sharp contrast with the mass of dark foliage. The sky is good and the double mounting of the print lends a distinct charm to the picture. (See Page 306.)

Study No. 36, "Hillside," by William T. Knox. In this picture we have a good rendering of a charming bit of woodland scenery. It owes its chief attractiveness to its even distribution of light and shade. The quality of sunlight softens and subdues detail, taking away all sense of harshness and the spotty effects so common in pictures of this kind. The winding pathway, which is the central point of interest, is admirably placed, and holds the lines of the picture together well. The beautiful gray mount, with delicate gradations of color, is in good harmony with the tones of the picture. (See Page 258.)

Study No. 11, "Fast Falls the Eventide," by George H. Paine. Perhaps the most interesting feature of this picture is the sky lit by the dying sun. The line of trees, with their branches and twigs silhouetted up against the sky form the principal point of interest. The remaining parts of the picture though dark and in shadow, show agreeable gradations of tone and are by no means flat or monotonous. Perhaps the chief charm is due to the sentiment of the subject itself. (See Page 112.)

Study No. 25, "Sunset Clouds over Bay," by S. I. Carpenter. We have in this print a beautiful cloud study which, though simple, is exceedingly effective. The rippling light in the sky is reflected in the surface of the water and the whole is rendered in broad flat tones that abound in gradation of color. There are no violent contrasts here and everything is soft and quiet, without losing the suggestion of sea and sky. The picture is restful and inspiring. (See Page 210.)

Study No. 18, "Snow Scene," by W. A. Wilson. In this picture we have a typical winter landscape, the snow newly fallen. (See Page 189.)

"Busily all the night
Is heaping field and highway
With a silence deep and white."

Leafless trees under most any consideration are good subjects for photography, but when covered with snow they are doubly interesting, forming in this instance the central

point of interest in the picture. While the rendering of the texture of the snow is good, footprints would have given us shadows that are now lacking. It is said that shadows make the picture and the broad sweep of transparent shadow here in the foreground is the most pictorial feature in the composition. The telegraph pole is decidedly objectionable.

Study No. 19, "Street Scene—Winter," by J. S. Neary. For delicacy of tone value and a broad arrangement of light and shade this picture is a photographic gem. Its strength lies in the subtle rendering and accentuation of the lighter tone. These with the transparent shadows in the roadway give a suggestion of delicacy and scattered light to the snow that is very pleasing. The chief difficulty the photographer has to contend with in snow scenes like this is the translation of color from a monochrome. The soft whites, the tender grays and russet browns have all been remarkably well rendered. (See Page 190.)

Study No. 23, "All Aboard," by William T. Knox. Here is a marine study of excellent quality. The point of view is distinctly original and the spacing of the picture is good. A sailboat at its moorings with canvas idly flapping in the wind is something of a novelty even in picture making. The tall mast of the sloop is emphasized by contrast with the horizontal lines of the pier. Two thirds of the picture space is devoted to sky and water, making one realize the quiet but tremendous power locked up in these silent forces of nature. Our first impression as we look at the print is one of vast spaces through which the wind hushed for the moment, will soon be blowing; the great soft clouds rolling across the sky, we feel instinctively, hold a pent up force that will soon break. The picture is full of suggestiveness and strength. (See Page 206.)

Study No. 24, "The Oyster Boat," by Dr. A. R. Benedict. A marine study made in deep shadow. The sloop with its dingy sail and the steamboat just visible on the horizon line of the picture suggests a strange contrast and marks a great transformation that has taken place in the modern commercial world. The emphatic note here is the

upright mast of the boat, which rises to the sky and holds the water and sky space together, giving a pleasant effect of unity to the picture. The oblique lines of the sail combine with the vertical lines of the mast to make a pyramid shape attractive to the eye and significant to the imagination. The repetition of these lines and shapes in the topsail, mainsail and jib is very pleasing and increases the beauty of the picture. The level line of the far horizon is repeated by the hull and bowsprit of the oyster boat and both with the upright masts show variety of line that gratifies the eye and makes the picture interesting. (See Page 209.)

Study No. 26, "Marine," by S. I. Carpenter. This is a happy study of surf that shows taste and feeling for the pictorial side of this work. Note the direction of the principal lines in this picture. They do not merely happen. The photographer selected these lines with the utmost care. He chose a point of view where the general lines of the shore presented a series of curves like the letter S. The white crest of the waves breaking at this point would necessarily follow the curvature of the shore line. The gently rounding masses of rock upon the shore are repeated on the distant point of land jutting into the sea, faintly suggested by the rolling white masses of surf, making this picture more and more admirable the better we know it. (See Page 213.)

Study No. 27, "Boats near Venice," by William H. Phillips. Here is a picture that has all the qualities of a painting, minus perhaps the color. Composition, drawing, balance, tone, texture, all are here, so that it is difficult to appreciate it rightly as a photograph. The buoy, the black hulls, and white side of the ships, all at different distances, strengthen the effect of breadth in the water spaces. The sky and water fill nearly three-fourths of the picture. The two ships in the foreground attract our attention the most and divide interest with the fisher boy. Indeed a line drawn through the center of the plate would show two distinct pictures with each of these as a central point of interest. The vertical and oblique lines of the sails repeated over and over again convince us that our eyes like variety of line

just as the muscles of the body like variety of exercise. The very haziness of the horizon line gives distance to the fartherest ships and suggests atmosphere and perspective. The whole effect is most grateful to the eye and would be beautiful to look at even if we had never heard of the beauties of Venice. It illustrates in a special way what artists call harmony of proportion in composition. (See Page 214.)

Study No. 49, "The Dreamy Susquehanna," by Karl M. Ebert. This is an instance where the charm of the picture is perhaps largely due to the sentiment of the subject itself. The combination of sky and waterway is simple enough, but it is the fine distribution of light and shade that gives the effect of breadth to this picture. The light of the evening sky reflected in the water gives a poetical touch to the whole scene. (See Page 319.)

Study No. 29, "Blossoms—Cherokee Rose," by Marion Shark Gaines. This picture is an example of what may be accomplished in flower photography by careful treatment both as regards arrangement and lighting. The arrangement here is decorative and the lighting is such that one gets a good idea of the true shape of the flower photographed. In photographing white flowers with green foliage the color screen has been used to good advantage in correcting color values on the sensitive plate, while the white background is a decided improvement over black as lessening the contrast of light and shade in the picture. (See Page 241.)

Study No. 32, "Chrysanthemums," by Dr. A. R. Benedict. A fine picture, in which the composer has caught with his sensitive plate the subtle qualities of the flower. The delicate stem, the leaves, the texture of the petals, the grace, and all the tender beauties of the flower are here. Even the color values can be felt, thus demonstrating the usefulness of orthochromatic plates and a light filter in all work of this kind. (See Page 248.)

Study No. 33, "Water Lilies," by Marion Stark Gaines. This is an exceedingly interesting photograph of plant life reproducing the water lily as it actually appears upon the lily pond when blossoming. The charm of this print lies in

the true rendering of form and tone values by repetition and suggestion. The plant is growing under normal conditions and in surroundings common to its species. The general effect of the photograph is remarkably true to nature. (See Page 251.)

Study No. 34, "The Blue Flag," by John M. Schreck. This is a graceful flower study, well rendered by the photographer. Owing to the close proximity of the lens the flowers do not reflect much surface light, hence the need of orthochromatic plates and color screens in most works of this kind. Furthermore, in photographing blue flowers and green leaves a deep-color screen was needed to correct the color values of the unassisted plate, while the background also should be of a middle tint to keep the balance true in all other respects. (See Page 252.)

Study No. 37, "Princess," by John M. Schreck. This is a picture of animal life of fine quality. The characteristics of the Gordon setter are well set forth in this noble type of dog. As an example of what can be accomplished by painstaking care and appreciation in photographing animal life it is of much interest. (See Page 263.)

Study No. 41, "Young King Birds," by John M. Schreck. A remarkably fine example of bird photography. Young birds in the trees are naturally very shy and timid and make poor photographic models at best. Evidently in this case the photographer used a lens of considerable focal length, since there is no evidence of fear on the part of the birds. He has secured in his result a fairly large image. The lighting and posing are exceptionally good and the picture demonstrates that much thought and care are needed to secure pleasing artistic results such as this picture shows. (See Page 278.)

Study No. 46, "Needle-hole Landscape," by George H. Paine. This photograph is remarkable for extreme fineness of detail which is not always to be found in a picture made without a lens. The soft definition and diffused focus effect in needle-hole pictures often destroy detail. The images of the trees and foliage are very clear which proves abun-

dantly, if any proof were needed, that the needle-hole is well adapted for pictorial work of any kind. (See Page 295.)

Study No. 47, "An October Day," Pin-hole by C. F. Clark. This print by the well known pictorialist, C. F. Clark, shows the advantages of pin-hole photography after proper selection of subject and arrangement of accessories have been made. There is a pleasing softness of outline, no distortion of atmospheric effects, and artistic rendering of tone values which are not always possible with a lens camera. Indeed the advantages in pin-hole photography far outweigh the disadvantages, and the wonder is that it is not more generally practiced. (See Page 296.)

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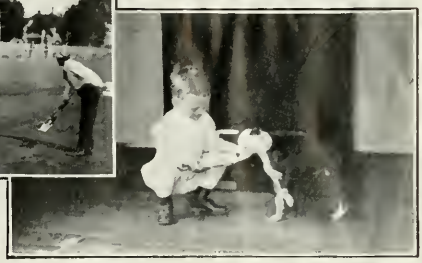

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